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MICROSCOPICAL AND URINARY NOTES.

BY HANS M. WILDER.

Illumination.—Perhaps the most difficult thing to learn, in the application of the microscope, is the proper handling of the light. Through faulty illumination the image of the object may appear distorted, or some of the minute structure may be entirely obliterated, and more than one really excellent objective has been condemned, because—through faulty illumination—it did not do what it was reasonably expected to be able to. What influence the mode of illumination has on the image formed can be shown by examining an object, with the appearance of the minute markings of which we are thoroughly familiar, with a wide or narrow angle of light; central or more or less oblique; with the mirror close to or farther removed from the stage. If we examine, for instance, a slide of potato starch, we shall see the individual starch grains either as solid bodies possessing an appreciable thickness, or as flat oval discs, or as depressed discs (something like soup plates); according to distance of the mirror from the slide, the mode of illumination and a very slight alteration of the focus. The markings will alter their appearance more or less, and at times disappear altogether; although we know that they are there, and that our objective shows them readily.

Outfit.—The following optical battery will be all that 999 of 1,000 pharmacists ever will have any use for. A 1-inch magnifier, 2-inch, $\frac{3}{4}$ -inch and $\frac{1}{2}$ -inch objectives, 2 eye-pieces, condenser on stand (bull's-eye) and a polarizing apparatus. These, with a microscope stand, nose-piece, microtome and turn-table will cost, at the lowest,

about \$85 to \$100, according to quality of the objectives, and whether the stand be provided with sliding-tubes or with a rack and pinion.

For a beginning a magnifier, one eye-piece, a $\frac{3}{4}$ -inch objective and a condenser on stand will be all that is necessary, besides the microscope stand; the lowest price of all of which is about \$25 to \$30. This will be sufficient for the first six or twelve months, then the remainder can be gradually added, the 2-inch objective being the least necessary objective. Of the apparatus, the nose-piece is of such a convenience that it rapidly becomes a necessity. A microtome (section cutter) can be dispensed with, free-hand cutting serving all useful purposes, though the sections seldom will be elegant. The turn-table is rendered necessary by the use of *circular* cover-glasses. Practically, *square* cover-glasses serve exactly as well, but are not considered as elegant as the circular ones; with these a turn-table is, of course, superfluous.

Objectives.—These are generally divided into three classes: student's, professional and first-class, which *now-a-day* means only objectives with low and medium angular aperture; wide angled; and with the widest angle obtainable. At present the objectives of each class are made and corrected as carefully as possible; some twenty years back, however, the lower angled ones ("student's") were generally poorly corrected, and entirely unreliable for exact investigations. The practical difference between low and medium angled objectives and those of the widest angle is that a wide angled objective shows more of the very minute details and shows them better than a low angled one of the same focus, which often fails to show them at all. Happily for us pharmacists the minuteness of the details in question is far greater than any we have to investigate; the so-called "student's" serve all our purposes, and are very much cheaper. It is an entirely different thing when we want to study the layers of the cell wall, for instance, or bacteria, then we cannot do without objectives of a very wide angle.

Cover-glasses.—The attention of those interested in the influence of the thickness of the cover-glass on the definition and resolution of the object examined, and how to counteract this influence by either shortening or lengthening the draw-tube—is called to an instructive article of Ed. Bausch, in the October number of the "Microscope" (Trenton, N. J.).

Glycerin mounts.—The great trouble with these mounts is that none of the usual cements (for ringing) will stick, unless *all* traces of the glycerin have been thoroughly removed. India-rubber cements or marine glue are not so sensitive; they stick in spite of a little glycerin which may happen to be present.

Silicate of sodium—a retraction.—A couple of months ago the writer strongly recommended water-glass as a medium. He did so, based on one year's experience. On a late inspection of his slides he found that nearly all silicate mounts had become more or less opaque, granular-like. It is a pity—through its quickly setting and strong sticking property, the silicate promised to be an excellent medium.

Urinary deposits.—These can be rendered more conspicuous by adding a few drops of eosine solution (the "carmine ink" of to-day to the urine, and allowing the casts, etc., to settle. (Dr. Jennings.)

Diabetic and albuminous urine.—As it is not always feasible to obtain the necessary pathological urine for (exercise) practice in testing, a very fair makeshift will be found in the following: Dissolve five drops of honey (or glucose) in a couple of ounces of water, and use this solution for practice, diluting it more and more. Shake the white of one egg with one pint of water and add a couple of crystals of thymol for preservation. Use similarly for practice.

A volumetric sugar table for Fehling's or Pavý's solutions, by E. W. Sharp (class of '84), will be found in the *Microscopical Bulletin*, 1890, p. 16.

Preservation of urine.—It has been variously recommended to add a few drops of chloroform, which does not in any way interfere with the testing.

THE KOLA NUT OF AFRICA.

BY P. L. SIMMONDS, F.L.S.

This seed or fruit, known under a variety of names in different parts of Africa, as kola, gourou, ombéné, nangoné, kokkorokon and matrassa, has only within a few years come into important notice as a food stimulant. Twenty or thirty years ago, it was incidentally described by Dr. Daniel and Prot. Attfield, in the *Pharmaceutical Journal*, but its extensive employment in Africa was comparatively little known. Although its use as a stimulant, in the place of coffee, tea, maté and coca by other people, had been very general, almost

from time immemorial among the various tribes of Equatorial Africa, the product was little known in Europe.

The opening up of Central Africa and the increase of trade on the West Coast has demonstrated its importance as a local article of commerce, and its chemical advantages have become duly appreciated. There are, however, two distinct products; one, the true kola nut, the product of *Sterculia acuminata*, popularly known as the female kola, and the false, or bitter kola, designated as the male kola. The true kola tree grows spontaneously over the range of Western Africa comprised between the 10° of N. latitude to the 5° S. latitude. This tree, to which attention has of late years been prominently directed by the authorities of Kew, has been introduced from time to time into India, Ceylon, Seychelles, Mauritius and Cochin China in the East; Zanzibar and Sidney, and in French Guiana, British Guiana, Guadalupe, Dominica and Jamaica in the Western Hemisphere.

Incidental mention of this nut has been already made in this Journal—1880, pp. 6 and 7; 1883, p. 27; 1884, p. 166, and 1886, p. 391. The tree commences to bear at 4 or 5 years, but it is not until 10 years that it is in full fruit, when it will produce on the average 120 pounds of seed twice yearly. Flowering in June, the pods will ripen in October and November, and a second crop will be yielded in May and June following. The fruits as they ripen have a yellowish-brown color, and, as the central suture opens, exposes both red and white seeds. The women remove the seeds, which are most appreciated and valued when they are fresh and moist. To preserve them, they are placed in baskets, in layers, with the leaves of *Sterculia cordifolia*, which are kept damp. If they are kept, or to be transported any distance, the nuts are washed and fresh moistened leaves added every month. The packages, weighing about 1 cwt., are sent to the Gambia, Gome and other districts. When the nuts become dry, they are reduced to powder, and taken in this state by the caravans to the interior. They frequently arrive, however, in a fresh state at Sokoto and Kouka, in the Soudan, and at Timbuctoo.

Not only are the kola nuts consumed in Africa, but they are also exported to Brazil for the use of the negroes there. The seeds of *Sterculia Chica* and *S. lasiantha* are also eaten in Brazil.

Sierra Leone is the principal market for these nuts. Ten years

ago, about 750,000 pounds of kola nuts were imported there, and 600,000 pounds to the Gambia.

The unerring instinct of man, even in uncivilized countries, has led him to select, from the many thousands of plants presented to him in Nature, just four or five, which, from their alkaloid active principle, theine, seem to be a necessary rather than a luxury of life. These nuts contain more theine (viz., 2·34) than most of the other dietetic products in use. The properties of the nut are said to be two-fold. In the first place, it enhances to many palates the flavor of food eaten afterwards; secondly, it possesses the more important function of staying the cravings of hunger, and enabling those indulging in it to endure prolonged labor without fatigue. Being bitter, they are used as a stomachic and a tonic.

It is beneficial in periodical and chronic headaches, in heart complaints and diarrhoea; and, mixed with cocoa, it has been found a sustaining and stimulating adjunct in exhaustive and wasting diseases. It is said to clarify beer and spirits, and, like the clearing nut (*Strychnos potatorum*), to render drinkable foul water. It is even spoken of as a cure for drunkenness, from the amount of theine it contains. Probably other species of kola or sterculia may furnish seeds equally used if they contain caffeine.

The false kola nut has been named *Garcinia Kola* by Dr. Heckel, but is not yet well defined, although it resembles the Eastern *Garcinia Morella*. These seeds are employed like the true kola nuts, although they have not the same properties, being destitute of the alkaloid. They are contained in a large berry, like an apple, to the number of three or four; oval, cuneiform. They are chewed generally on the West Coast, and have a bitter flavor, like green coffee. They are said to be an effectual remedy for cold in the head, a few seeds being chewed in the course of the day.

Elder Bark as a diuretic.—G. Lemoine of Lille recommends the inner white bark of the European elder, *Sambucus nigra*, as a valuable diuretic, a handful of the fresh material being boiled in a liter of water, and the decoction administered during the day; it has also a laxative action.

Mites in flaxseed meal and ground mustard multiply rapidly, and render the meal unfit for use. H. David (*Bulletin Commerc.*) recommends the seeds of both, flax and mustard, to be ground fresh for use. The mite is a species of acaridæ, and is known as *Tyroglyphus siro*. It is also met with upon cheese in company with another species.

SOME INDIAN FOOD PLANTS—CALIFORNIA SOAP PLANT.

V.—*Chlorogalum pomeridianum*, Kunth.

BY HENRY TRIMBLE.

Contribution from the Chemical Laboratory of the Philadelphia College of Pharmacy.—
No. 79.

Read at the Pharmaceutical Meeting, November 18.

While the above is not strictly a food plant, nevertheless the above title is retained as an appropriate one for the Indian domestic plants.

For the material of the chemical examination, as well as for the following report, I am indebted to Dr. V. Havard, U. S. Army Surgeon, at Fort Buford, N. Dakota:

"This is one of the many showy plants of the California Liliaceæ, and well worthy of cultivation for its beauty.

"Stem stout, scarcely leafy, from a fibrous or membraneously coated bulb, bearing a spreading sparingly branched racemose panicle, 1 to 3 feet high; leaves broadly linear, somewhat fleshy and flaccid, about a foot long and half an inch wide; pedicles short, scattered, bearing white purplish-veined flowers, whose 6 segments are 8 to 10 lines long. The flowers open only after midday, whence the specific name.

"Grows in valleys and foot-hills of the Pacific Coast from Oregon to Central America. In California, it is abundant in places 'from the Upper Sacramento to the Stanislaus, Monterey and Santa Barbara.'

"The ovate bulb is one to four inches in diameter and about four inches in length. The coats of which it is made up are thick and fleshy in the centre, the white-yellowish section exuding a thickish frothy mucus; they grow thinner and drier on approaching the surface, where they become membraneous fibrous, and finally break on the outside into a thick covering of coarse, brownish fibres resembling the coir of the cocoa nut.

"These fibres are light, elastic, of good strength and durable. They have been separated from the bulbs, especially by the Chinese, and used as hair to fill cushions, mattresses, etc., constituting, in places, quite an article of commerce.

"The bulb has for a long time been held in high esteem by Indians and Mexicans for its detergent properties, which make it

an excellent substitute for soap—so efficient and harmless that it is still preferred for washing laces, embroideries and such like delicate fabrics. A cold infusion is advised as dentifrice, shampoo liquid, and a valuable lotion for both face and hands.

"The medical properties of the bulb are unknown, the juice is acrid to the taste, and said to be poisonous.

"The other two species of this genus growing in California have also large bulbs, which probably possess the same detergent properties, but are without the covering of fibres so conspicuous in the above."

The bulbs were freed from the husk-like outer scales, until the white fleshy interior was reached, and this inner portion was cut into small pieces, and in this condition used in the following analysis.

The moisture, by drying to constant weight at 110° C., was found to be 73.13 per cent. and ash 0.70 per cent. No unusual constituents were found in the ash. There were—

	Per Cent.
Soluble in water,	36.50
Soluble in dilute HCl,	62.70
Insoluble silica,	0.80
	<hr/> 100.00

Stronger ether extracted 0.13 per cent. from the moist plant. The extract was reddish brown, crystalline, and of a peculiar odor. The crystals were soluble in water, and removed from it by agitation with ether. They gave negative reactions for alkaloids, but by the peculiar odor developed on heating with HCl and the presence of glucose, a glucoside was indicated. That part of the extract insoluble in water was red, resinous and soluble in alcohol.

The residual plant, after extraction with ether, yielded 4.49 per cent. to absolute alcohol. This extract was dark brown, nearly black, odor resembling chocolate, largely soluble in water, forming a reddish, neutral, frothy liquid, and without reaction toward ferric chloride.

Water extracted from the remaining plant 9.35 per cent., consisting of 0.7 per cent. dextrin, 1.45 per cent. glucose, 0.45 per cent. saccharose and 1.20 per cent. mucilage. The solution was yellow, turbid, frothy, neutral and possessed an acrid taste. The residue

after treatment with dilute alkali and acid amounted to 4.13 per cent., representing cellulose and lignin.

A special determination of saponin showed there were 1.87 per cent. of this substance present, and to this, no doubt, the plant owes its peculiar virtues, since this indicates in the absolutely dry bulb 6.95 per cent., sufficient to account for the frothing tendency of the different watery solutions.

Brief references are made to this plant in this journal, 1876, p. 520, and 1877, p. 569.

THE FLOWERS OF VERBASCUM THAPSUS.

BY EDWIN L. JANSON, PH.G.

Contribution from the Chemical Laboratory of the Philadelphia College of Pharmacy.—
No. 80.

Mullein flowers have recently attracted some attention in medical practice and are extensively employed as a domestic remedy.

The material used in the following investigation was collected by myself near Canton, O. Only the corolla and adhering stamens were used, and were carefully dried so as to retain their natural golden yellow color. A small quantity of the seeds were also collected and a partial analysis made of them. The medicinal properties of the flowers are demulcent, diuretic, anodyne and antispasmodic. The infusion has been used in catarrhal affections of the respiratory organs, and the flowers, when boiled with milk, have been a popular remedy to palliate cough and diarrhoea. The odor of the flowers when fresh is slight, but when dry sweet and honey-like; the taste is mucilaginous and somewhat bitter.

Petroleum ether and stronger ether successively used on the drug extracted about one-half per cent. in each case. Quite a change in the color of the drug was noticed after the extraction with ether. It was at first light yellow, but that solvent removed the yellow color and left the residue of a dark green color. The yellow coloring matter was either a part of, or else it was retained by, the resin dissolved by ether, and it was not found possible to separate it in the pure state. The drug after exhaustion with ether yielded 10.06 per cent. to absolute alcohol.

A considerable portion of this alcoholic extract was soluble in water acidified with hydrochloric acid. When agitated with petroleum ether this acid solution yielded some color to petroleum ether,

and this latter solvent on evaporation left a greenish-brown crystalline mass, of a strong disagreeable odor and a sweet taste; tests with Fehling's solution showed it to be an easily decomposable glucoside. Another crystalline residue was obtained by making the above acid solution, of the alcoholic extract, alkaline and agitating with ether, chloroform extracted from the same solution, after the agitation with the other solvents, a red-brown amorphous mass.

Both of these residues reduced Fehling's solution, and many changes in color were noticed, indicating that these substances take some part in the coloring matter of the flowers.

The drug was also found to contain 2.49 per cent. of mucilage, 11.76 per cent. of carbohydrate corresponding to dextrin, 5.48 per cent. of glucose, 1.29 per cent. of saccharose, 16.76 per cent. of moisture, 4.11 per cent. of ash, and 32.75 per cent. of cellulose and lignin. No reaction indicating tannin was obtained with iron salts, but an aqueous solution of the alcoholic extract yielded a slight precipitate with gelatin.

The seeds which were also collected and examined are small, about $\frac{1}{5}$ of an inch in length, cone-shaped, finely pitted, very tough, difficult to powder, nearly inodorous, and possessing a somewhat acrid taste; they are said to be narcotic, and to have been used in asthma and infantile convulsions.

They yielded to petroleum ether 20.75 per cent. of a bright, green fixed oil. The acrid principle was obtained from the alcoholic extract soluble in water, by agitating with petroleum ether. The moisture was determined to be 10.86 per cent., and the ash 3.90 per cent.

SOLANUM CAROLINENSE (*Linné*).

By G. A. KRAUSS, PH.G.

Read at the Pharmaceutical Meeting of the Philadelphia College of Pharmacy,
November 18.

This perennial herb grows in abundance in the Southern States along the roads and in dry places, and reaches a height of nearly 2 feet. The root is thin, has a thick bark and attains a length of from 1½ to 2½ feet, descending vertically. The stem is erect; the leaves are broadly oblong, sinuate, serrate, and their midrib, as well as the stem are beset with numerous prickles. The flowers are rather large with a united 5-cleft corolla, and a calyx con-

sisting of 5 sepals; 5 stamens and a prominent pistil with one stigma. It flowers from June till September. The fruit is a berry about $\frac{1}{2}$ inch in diameter, and contains numerous seeds around a central placenta.

My attention was first called to this plant through the complaints of farmers who had experienced considerable loss among their horses and cattle. The farmers claimed that the animals die suddenly with poisonous symptoms. Examining some of their pastures, I found an abundance of *Solanum carolinense* and plain evidence that the animals had fed on it.

I commenced investigating the composition of the plant and have just finished the root part (leaves and fruits are under examination); the results obtained may induce further investigation in this direction.

I. THE ROOT BARK.

As stated above, the root is thin but very tough. The bark is thick and in the fresh state fleshy. On drying the bark separates easily from the inert wood. The samples for examination were collected by the author during the fall.

Petroleum ether extract:

	Per Cent.
Alkaloids,	0'085
Volatile oil,	0'120
Fat,	0'730
	— 0'935

Ether extract:

Alkaloids,	0'025
Resin soluble in alcohol,	0'185
" " ether,	0'025
	— 0'235

Alcohol extract:

Alkaloids (Solanine),	0'285
Resin soluble in ether,	0'245
" " alcohol,	0'020
	— 0'550

Aqueous extract:

Mucilage,	0'560
Dextrin,	1'280
Albumen,	0'600
Glucose,	1'770
Saccharose,	0'750
Extractive and undetermined,	3'520
	— 8'480

Caustic soda extract:

Albuminoids,	5.145
Not precipitated by alcohol,	4.160
	— 9.305

Hydrochloric acid extract:

Oxalate of lime,	1.205
Starch,	6.150
	— 7.355
Incrusting matter, cellulose, etc.,	53.450
Moisture,	8.590
Ash including sand,	10.800
Loss,	0.300
	— 100.000

From the analysis it will be observed that but little is extracted by petroleum ether, ether and alcohol, and that the root bark contains comparatively large amounts of albuminoids and starch.

The ash contained besides calcium, potassium, iron and sulphuric acid, a large amount of sand, which must have adhered to the root, notwithstanding its careful treatment.

The total alkaloids amounted to about 0.4 per cent. The alkaloids extracted by petroleum ether and ether differed in some reactions from the one dissolved by alcohol. The separate alkaloidal extractions behaved identically with the following reagents:

Mayer's solution gave a white flocculent precipitate; mercuric chloride gave a white flocculent precipitate; iodine gave a brown precipitate; chloride of gold gave a yellow precipitate, with gradual reduction of metallic gold.

The alkaloids were crystallizable and dissolved in dilute acids, from which ammonia precipitates them again.

Sulphuric acid spec. grav. 1.84, produces a fine red color.

Heated on platinum they emitted an odor of burning hair, leaving no residue.

The alkaloids differed as follows:

(a) The alkaloids extracted by petroleum ether and ether did not reduce Fehling's solution, even after having been boiled with dilute acids. They were soluble in benzol and chloroform. They crystallized in hard shining prisms and their solutions did not gelatinize. The precipitate with Mayer's solution was wholly dissolved by ether, which on evaporation left a residue of crystals of $\frac{1}{4}$ inch length. These crystals were dissolved in alcohol, H_2S passed through the solution, HgS removed by filtration, and the

liquid tested for glucose with no reduction of copper, showing that no decomposition had taken place.

(b) The alkaloid extracted by alcohol crystallizes in needles. It did not reduce Fehling's solution when pure; but it did so promptly after having been boiled with dilute HCl. An acid solution of this alkaloid gelatinizes on standing over sulphuric acid. Within this mass fine needles were observed. Their taste is bitter and somewhat burning, and the mass dries up to a brown, horny mass. The alkaloid did not dissolve in petroleum ether, but was slightly soluble in ether, not at all in water and easily in alcohol. The precipitate with Mayer's solution was dissolved in alcohol, H_2S passed through the solution and HgS removed by filtration. The remaining liquid promptly reduced Fehling's solution, showing that with this alkaloid decomposition had taken place.

Owing to the small amount of material (300 gm.) on hand, and the advanced season, I was unable to obtain sufficient alkaloids to make an ultimate analysis, but intend to do so next year.

From the above it appears probable that the alkaloid extracted by petroleum ether is identical with the one extracted by ether, while it appears most certain that the one extracted by alcohol is identical with solanine.

According to Zwenger (Dragendorff, Gerichtlich-Chemische Ermittelung d. Gifte, p. 262) and O. Gmelin (Gmelin's Handbook, vol. 15, p. 349, Cavendish Society) solanine splits up into solanidine and glucose on boiling with dilute acids. Its solution gelatinizes, and it gives a red color with H_2SO_4 . All these reactions have been obtained with the alcohol soluble alkaloid.

Whether the petroleum ether and ether soluble alkaloids are identical with solanidine, or whether they contain a new alkaloid, I shall endeavor to investigate as soon as I have procured sufficient supply of the drug.

That the alkaloids are combined with an acid must be certain from the following experiment: 100 gm. of powdered root bark were exhausted by alcohol, and the latter distilled off in a vacuum; water dissolved from the nearly dry extract all the alkaloids, and ammonia precipitated them from this solution, the liberated alkaloids not dissolving in water.

LABORATORY, MANSFIELD DRUG CO.,
MEMPHIS, TENN., Nov., 1890.

RESIN OF PODOPHYLLUM AND PODOPHYLLIN.

By J. U. LLOYD, Cincinnati.

(Continued from page 388.)

Discussion over the name Podophyllin.—Prof. King was numbered among those who advocated the designation “Resin of *Podophyllum*,” which was the name he first gave it and employed in its introduction.¹ Although he finally acquiesced and accepted the popular name “*podophyllin*,” making that expression the prominent name in the first edition of his Dispensatory (1852), he supplemented it by calling the drug “a resin to which the name of *podophyllin* has been given.” From 1840 to 1855 considerable controversy, accompanied by some acridity, was exhibited in the eclectic ranks in connection with the subject of “resinoids” and their names, as shown in the current pages of the Worcester Journal of Medicine (Worcester, Mass.), the Western Medical Reformer (Worthington, O.), the College Journal (Cincinnati, O.), and the Eclectic Medical Journal (Cincinnati, O.), but this controversy is probably not familiar to persons unacquainted with the actors and the early eclectic literature connected with the subject. The late Mr. Wm. S. Merrell, of Cincinnati, who first used the term *podophyllin*, ably defended that name. In reply to critics he called attention² to the fact that the names for *jalapin* and several other similar bodies, which were not definite chemical compounds, were named after that plan, and he finally informed his antagonists that he had actually accepted the name (to use his words) suggested by “Prof. Wood, the author of the United States Dispensatory, who is no mean authority.” Mr. Merrell then continued his argument by saying that “the names of the resinous principles or resinoids, should be made to terminate in *in*, after the analogy of the generic substance resin or rosin, and accordingly we should write *Podophyllin*, *Macrotin*, *Jalapin*, etc.” The method was accepted by Hill (Cincinnati) and Kieth (New York), the other makers of eclectic remedies at that period, and each placed a limited line of “resinoids” upon the market. They accepted without question the nomenclature that Mr. Merrell had established, although, in eclectic literature, some very acrimonious discussions appeared con-

¹ *Western Medical Reformer*, April, 1846.

² *Eclectic Medical Journal*, July, 1850, p. 299.

cerning the drugs to which the names were applied.¹ The foregoing view of those terms finally prevailed among all Eclectics, and became established firmly in the drug trade, and, as before remarked, when the (more or less) resinous precipitate obtained from *Podophyllum peltatum* finally demanded recognition in the United States Pharmacopœia, it came before the revision of that work as an eclectic drug under a name formulated by the editors of the United States Dispensatory that had become argumentatively established as the universal appellation.

Introduction to the U. S. P.; Resina Podophylli.—The substance under consideration, as before stated, was the first member to obtain popularity in the list of eclectic "resinoids." Through the influence of Professors King, Hill, Morrow, and other contributions to eclectic literature, the drug had quickly assumed a position and importance perhaps seldom attained by vegetable remedies within so short a period. Its unquestioned efficacy as a cholagogue cathartic established it in the practice of the eclectic medical profession, to whom it appeared in the heat of their controversy over the abuse of the mercurial preparations that were then so extensively employed in regular practice, and it was hailed by eclectics as a vegetable substitute for the mercurials, and even called the "Eclectic Calomel." Before its character was understood to the leaders in the Regular School, it became, as has been stated, under the name *podophyllin*, perhaps the most prominent of eclectic drugs. Such conspicuity as it enjoyed in their ranks could not, however, exist with reference to a drug used so extensively in Eclecticism without recurring introductions to members of the Regular School, and, in consequence, it came into general repute with numbers of their general practitioners before it had been recognized authoritatively by any of their book-makers. Thus it happened that commercial "*podophyllin*" became a valued drug in general, regular practice years before it received recognition, either in the United States Pharmacopœia or Dispensatory. Hence, when at last it was deemed advisable to give a position in the Pharmacopœia to this drug, which had long been known to be of unquestioned value, it was found that its "eclectic" name *podophyllin*, had become established at home and abroad.

'Probably unaware of the record in Eclecticism—at least, without

¹ These discussions, being confined to eclectic publications, are unknown to most persons, for few students have that literature at command.

recognition of that fact—the controversy or discussion over the name was resuscitated and continued when the drug knocked at the door of the U. S. P. As early as 1851, however,¹ the late Edward Parrish had recognized the advent of these products (Resinoids or Concentrations) of "Eclectic Pharmacy," and deprecated their names. He said: "As well might the Calisaya Extract of Ellis be called *quinia* as the impure resinoid substance precipitated from a tincture of mayapple, by the above process, *podophyllin*." This argument, however, failed to impress either the makers or consumers of "*Podophyllin*," and when it became officinal in the United States Pharmacopœia (1860) as "*Resina Podophylli*" the title of the commercial drug remained unchanged. This fact was commented upon by Dr. Squibb, in 1868.² He considered it "unfortunate that those whose aim should be to give accuracy and precision to matters connected with medical science and art should so commonly refuse to this substance its proper and correct name, and adhere to the inaccurate and otherwise objectionable name of *podophyllin*." He severely criticised the names affixed to the class (Resinoids or Concentrations) of which *Podophyllin* was a member, stating that the termination *in* was "applied to this and other substances by the Eclectics through ignorance of its true nature. It is a resin proper," he continued, "and there seems no good reason for miscalling it by an incorrect name which has attained an equivocal popularity, and the common pronunciation of which is so vulgar and inelegant."

Notwithstanding this stinging criticism, supported indirectly by the writings of other talented and enthusiastic leaders who, in regular medicine and in pharmacy, confined themselves to the officinal appellation, and threw their influence in the direction of the name that was accepted without question as being the only scientific and proper one, little impression seems to have been made on either those who manufactured or consumed the drug. The United States Pharmacopœia, in each subsequent revision, has made the name "*Resina Podophylli*" officinal; the influence of the majority of the instructors has been continuously added thereto; but with so little effect, that in commerce when the drug is specified, and when it is prescribed by physicians, the appellation is usually *podophyllin*.

¹ AM. JOUR. PHARM., 1851, p. 329.

² On the Preparation and Use of Resin of *Podophyllum*, AM. JOUR. PHARM., 1868, p. 1.

NOTES ON THE DETECTION OF SILVER SALTS IN
SOLUTIONS CONTAINING MERCUROUS SALTS.

BY FRANK X. MOERK, Ph.G.

Contribution from the Chemical Laboratory of the Philadelphia College of Pharmacy.—
No. 82.

The method of detection of these two salts in qualitative analysis depends upon the precipitation first of the chlorides by hydrochloric acid and then treating the washed chlorides upon the filter with water of ammonia, the mercurous salt being indicated by a blackening of the precipitate, while the silver chloride dissolves and is reprecipitated by addition of nitric acid. If the black residue representing the mercurous salt be heated with nitric acid, the mercurous salt is converted into mercuric salt which, after diluting with water, is not precipitated by addition of hydrochloric acid.

Examining a solution containing about one per cent. of silver nitrate with mercurous nitrate, it was found that after acidifying the ammonia solution with nitric acid, only the faintest turbidity was produced, whereas from a one per cent. silver nitrate solution could be expected a copious precipitate; it did not matter how often the ammonia solution was returned to the filter and allowed to run through again, the turbidity of the acidified solution was not perceptibly increased, nor did loosening the precipitate from the sides of the filter alter the result. Boiling the residue of the ammonia treatment with nitric acid for several minutes, diluting with water and adding a little dilute hydrochloric acid gave a decided precipitate, which, collected upon a filter after washing, was easily soluble in ammonia and then reprecipitated by addition of nitric acid.

The probable cause is that the precipitated mercurous chloride surrounds the precipitated silver chloride and prevents the solvent action of the ammonia.

A solution containing silver nitrate, lead nitrate and mercurous nitrate was found to give the test for silver without the above difficulty.

Further experiments will be made to ascertain the proportions of the two salts necessary to give the above results.

Bromoform has been used in whooping cough by Dr. Neumann (see also this volume pp. 89 and 405) in doses of 3 to 5 drops, suspended in syrup, and frequently repeated. It reduces the number of paroxysms and appears to cut short the disease.—*Therap. Monatsh.*, July, 1890.

TESTS FOR HYPOPHOSPHITES.

BY FRANK X. MOERK, Ph.G.

Contribution from the Chemical Laboratory of the Philadelphia College of Pharmacy.—
No. 81.

As stated in an article upon "The Estimation of Hypophosphorous Acid and the Hypophosphites,"¹ there are three tests obtainable with this acid and its salts, which are said to be characteristic: (1) The cuprous hydride precipitate changing upon boiling into metallic copper and hydrogen, this test answering only in comparatively concentrated solutions; (2) the blue color or precipitate with acid solution of ammonium molybdate after the addition of a few drops of sulphurous acid; (3) the blue color with tungstates under the same conditions. The last two tests are obtainable in dilute solutions. The molybdate test, according to E. J. Millard,² is best applied as follows: "To a solution of hypophosphorous acid or any of the hypophosphites the acid solution of ammonium molybdate is added, and then a few drops of sulphurous acid; a blue precipitate is immediately formed, or, if the solution be dilute, a blue coloration is produced which is considerably intensified by agitation or gentle warming." Millard further states that H_2S and $SnCl_2$, as reducing agents, do not give the reaction because they carry the reduction too far, namely, to the brown state. Of salts interfering with the reaction, he says: Chlorates prevent it, sulphides produce a brownish-black precipitate that would completely hide it, and thiosulphates reduce the molybdate to the brown state.

For several years prior to the publication of the above, it was noticed in the Chemical Laboratory of the College that students occasionally obtained a blue color with ammonium molybdate in a solution containing thiosulphate; although I often made the test with the same solutions and occasionally obtained the blue color; still the number of times I was successful in this bears a very small ratio to the number of times I was unsuccessful, even though the reagents were added in the same quantities and in the same order.

After a large number of experiments, the difficulty in always obtaining the blue color was found to be due to the excess of nitric acid present in the solution of ammonium molybdate; for if the

¹ AM. JOUR. PHARM., 1889, 326.

² Pharm. Journal, Jan. 26, 1889. Reprinted in AM. JOURN. PHARM., 1889, 129.

greater part of the nitric acid be neutralized by addition of ammonia the test succeeds with thiosulphate even in the cold. With this slightly acid ammonium molybdate solution, it is possible to obtain a faint blue color with sulphites; this, however, shows best by adding a slight excess of ammonia after warming the mixed sulphite and molybdate solutions. It may be stated here that this faintly acid solution does not give the *hypophosphate* test as readily or as nicely as the more acid commercial solution; using this strongly acid ammonium molybdate solution, the test for hypophosphites can be so modified that sodium sulphite solution, or even a small quantity of thiosulphate solution, may be used in place of sulphurous acid.

In repeating the tests made by Millard, it was found that *stannous chloride*, in moderately dilute solution, *invariably* gave a very fine blue color, with the commercial molybdate solution; the same test carried out with a concentrated solution of stannous chloride added in considerable quantity, gave at first a brownish solution, changing on standing to a greenish-blue. It was also found that ammonium molybdate added to complex solutions containing stannous chloride produced a blue color.

From the above, it will be seen that several reducing agents besides hypophosphites have the power of reducing molybdic acid to the blue state, but that only the stannous chloride will do it under the same conditions as the hypophosphites. Millard states in the presence of sulphides, thiosulphates and chlorates the test for hypophosphites may be obtained after these salts have been decomposed by boiling with dilute hydrochloric acid. This is correct as far as the sulphide and thiosulphate are concerned, but the chlorate boiled with hydrochloric acid liberates chlorine which oxidizes rapidly the hypophosphate to phosphate, and then a yellow precipitate is obtained when the molybdate solution is added. In solutions containing stannous chloride this latter is not changed by boiling with hydrochloric acid, and hence the solution after boiling will give the blue color with ammonium molybdate, although no hypophosphate is present.

Considerable interest was excited after the above results were obtained, as to the behavior of sodium tungstate (also given by Millard as a delicate test for hypophosphites) towards the substances giving, under the proper conditions, similar tests with the

molybdate. It was found that thiosulphate and sulphite alone give no blue color, and stannous chloride produces only a greenish color or precipitate. Hence, of the two tests, this one appears to be the most characteristic of hypophosphites. To obtain this test the solution of sodium tungstate in distilled water (1:100) is acidified (rather strongly) with nitric acid, then the hypophosphite and sulphite solutions added and moderately warmed; the blue color resembles that of Fehling's solution and more rapidly intensifies than the corresponding test with molybdate. Experiments made to ascertain how delicate these two tests were proved that solutions containing one part calcium hypophosphite in 5,000 parts of water still gave very distinct blue colorations; in this dilution the molybdate test is frequently obtained of a greenish-blue color, while the tungstate is a very fine blue; solutions containing one part in 10,000 parts of water failed to respond. Millard does not find the molybdate test quite as delicate, he stating that one part in 2,000 can still be detected; in mixtures he finds 1 in 300 to be the limit.

Experiments were next made to ascertain if it was possible to detect with both the molybdate and the tungstate tests the hypophosphite in presence of the interfering salts, sulphides, thiosulphates and chlorates. Solutions containing one per cent. of these salts were mixed with equal volumes of a solution containing 0.1 per cent. of calcium hypophosphite, so the solution contained hypophosphite 1:2000 and 10:2000 of the other salts. The chlorate prevented not only the molybdate but also the tungstate test for the hypophosphite (even in solutions containing one per cent. each of chlorate and hypophosphite); as previously stated, by boiling such a solution with hydrochloric acid, the hypophosphite is completely and rapidly converted into phosphate. After numerous experiments, the following procedure allowed the detection of the hypophosphite: To the mixture of chlorate and hypophosphite an equal volume of one per cent. sodium tungstate solution is added, then a crystal of sodium sulphite and nitric acid to acid reaction (should the odor of SO_2 disappear, another crystal of Na_2SO_3 must be added); on slight warming the blue color develops; the blue color is as fine as though obtained from a pure hypophosphite solution. This test is probably successful because the liberated chloric acid or its decomposition product oxidizes first the SO_2 without acting upon the hypophosphite and, hence, the caution that the odor of SO_2 must be apparent before warming.

The blue, or sometimes a greenish-blue, color is also obtainable from this mixture of chlorate and hypophosphite with the ammonium molybdate test if applied as above; in this test, using the strongly acid solution of ammonium molybdate, the final addition of nitric acid is not necessary.

A mixture of *thiosulphate* (10 : 2000) and *hypophosphite* (1 : 2000) with tungstate of sodium gives a blue color slightly interfered with by the precipitation of sulphur. With the molybdate test it is best to first boil with HCl until the odor of SO₂ disappears; the solution of above strength will still give a blue or greenish-blue color.

A mixture of *sulphide* and *hypophosphite* can be tested as follows: Add to the mixture crystallized sodium sulphite and dilute nitric acid until the odor of SO₂ is permanent (the evolved H₂S reacts with the SO₂ to form S and H₂O, so that when the odor of SO₂ becomes permanent all of the H₂S has been decomposed), then add an equal volume of the molybdate or tungstate solution, and apply moderate heat. The precipitated sulphur does not prevent the blue color appearing in solutions containing as little hypophosphite as 1 in 2000.

In the presence of *stannous chloride* the molybdate test is not available; the tungstate test applied in the following manner will detect hypophosphites in solutions containing 0.05 per cent. To the mixture add a crystal of Na₂SO₃, then acidify with nitric acid, add an equal volume of sodium tungstate solution (one per cent.) and warm; the blue color will slowly develop.

This last method of procedure is, I believe, the one leading to best results in detecting the hypophosphites either in simple or complex solutions.

GLEANINGS FROM THE GERMAN JOURNALS.

BY FRANK X. MOERK, PH.G.

The glycerin test of the new German pharmacopœia, in which 1 cc. of glycerin boiled with 1 cc. water of ammonia and three drops of silver nitrate solution should produce no change, has been the subject of considerable writing in the German pharmaceutical press, the writers finding few samples that stand the test if the mixture be boiled for several minutes, whereas if the heating be done in a water-bath most of the samples respond properly. Dr. Bruno Jaffé calls

attention to the fact that only *decolorized* glycerins (not purified by distillation) will comply with the pharmacopeial test; these glycerins contain most of the impurities of the crude glycerin. After this discovery, to samples of distilled glycerin were added several per cent. of arsenious oxide, and these samples then submitted to the test; it was found that they complied with the test and, hence, the deduction that the test is of no service in the detection of arsenic in glycerin. The cause of this is ascribed to the use of such a large excess of ammonia, Dr. Jaffé stating that with a large excess of ammonia *all* samples of glycerin will fail to show any reduction, while if an excess of glycerin be used, *all* samples will reduce ammoniacal silver nitrate; as long as by the presence of a sufficient quantity of ammonia the boiling point of the mixture be kept sufficiently low, no reduction will take place; if, by boiling, a portion of the ammonia be vaporized the boiling point rises, finally reaching such a temperature at which reduction will take place under all conditions. Using a sufficient excess of ammonia, formic acid, arsenious acid and aldehyde will also fail to reduce silver nitrate.—*Chemiker Ztg.*, 1890, 1,493.

Morphine salts and cherry-laurel water.—The appearance of a precipitate in a freshly-made solution of morphine hydrochlorate in distilled cherry-laurel or bitter almond water has been frequently noticed; the precipitation has been explained in various ways: (1) Decomposition of the solution by light; (2) by the glass vessels giving up alkali to the solution; (3) by action of micro-organisms, and (4) by the use of magnesia in making the medicinal water (AM. JOURN. PHARM., 1890, 163): Theodor Salzer recently found the precipitation in one case at least to be due to the distilled bitter almond water containing considerable quantities of ammonium cyanide, a constituent of the bitter almond water first noticed by Linde. Salzer found 10 cc. of the water to contain sufficient of this *normal* constituent to precipitate 0.4 gram morphine. The water used in making this bitter almond water was free from ammonia.—*Pharm. Ztg.*, 1890, 669.

Caoutchouc solutions may be readily made by adding to the solvents, benzol, carbon disulphide, etc., certain volatile oils, especially eucalyptus oil. Mixtures containing 96 to 92 parts benzol and 4 to 8 parts eucalyptus oil, or 95 parts carbon disulphide and 15 parts eucalyptus oil will easily dissolve 16 to 20 parts of caoutchouc. It

is preferable to allow only the vapors of these mixture to come in contact with the caoutchouc, as the latter in dissolving will leave the impurities.—W. Lascelles (*Bayr. Gew. u. Ind. Bl.*), *Pharm. Centralhalle*, 1890, 654.

Methylal, on account of its low boiling point, 42° C., and its easy volatilization, is coming into use in the extraction of volatile principles, especially in the extraction of perfumes. Experiments made with violets prove its success in extracting delicate odors.—*Chemiker Ztg.*, 1890, 1474.

Detection of biliary pigments in urine.—To 4 or 5 cc. of slightly warmed urine 5 to 10 drops tincture of iodine are added, agitating after the addition of each drop; in the presence of biliary pigments a pretty olive-green coloration is produced. Excess of tincture of iodine will produce a dirty brown-red color; normal urine at first decolorizes the iodine solution, then gives a red coloration, and on addition of an excess of iodine a dirty brown-red color.—S. Kathrein, *Pharm. Post*, 1890, 845.

New Synthesis of Indigo.—In the *Chemiker Zeitung*, of October 1, L. Lederer publishes a simple method by which this valuable dye can be obtained: 2 grams anilido-acetic acid are slowly added, with stirring, to 8-10 grams fused sodium hydrate; the fusion, at first, of a pale yellow color, is continued until a pure orange color is obtained. The cooled mass, by dissolving in a large quantity of water, separates the indigo. In the same journal, of October 8, K. Heumann, apparently independent of Lederer, discovered the same synthesis. What Lederer calls anilido-acetic acid is called by Heumann phenylglycocol (C₆H₅NHCH₂COOH); one part of this compound is heated with two parts sodium or potassium hydrate; at 260° C. the fusion, with effervescence, assumes a dark orange color. The fusion dissolved in water, without access of air, produces a yellow solution; exposure to air, passing a current of air through the solution, or addition of ferric chloride and hydrochloric acid, will cause the precipitation of indigo. Heumann has applied for patents and transferred all rights to the "Badische Anilin- und Soda-fabrik."

Examination of tragacanth.—According to the German pharmacopoeia, tragacanth mucilage (1:50) should assume a yellow color with solution of soda. L. Reuter finds that this coloration is not produced in the cold, but rapidly if the mixture be heated for a few

seconds in a water bath. Thinking that tragacanth of yellowish color, which gives the reaction more readily, contained a yellow principle giving the test, samples of tragacanth, white and yellow, were extracted with 91 per cent. alcohol. The residue from both was of a decided yellow color, containing fat, a bitter principle and a variety of sugar, but did not deepen in color on addition of NaOH. The tragacanth after treatment with alcohol acted towards NaOH just as the tragacanth before such treatment.—*Apotheker Ztg.*, 1890, 644.

Substitute for gum arabic.—A decoction of linseed with dilute sulphuric acid and water (1 : 8 : 8) at first is quite mucilaginous, but later becomes rather limpid; if at this point it be strained and to the strained liquid four volumes of alcohol added, a precipitate is obtained which, after washing with alcohol and drying, forms a clear gum without color and taste.—(*Dingler's Polytechn. Journ.*), *Apotheker Ztg.*, 1890, 639.

Gelatinizing of digitalis infusions.—A study of this change frequently noticed in the infusion leads to the following conclusions: (1) Digitalis collected at different periods does not show any differences. (2) The petioles are richer in pectinous substances than the leaf itself. (3) By prolonged heating of the infusion the pectin is so modified that by the action of micro-organisms (from the air) fermentation sets in, especially in the presence of sugar, which causes the gelatinizing of the infusion. (4) Gelatinizing does not take place if the directions of the Pharmacopœia are followed, especially if leaves used be freed from the petioles.—Dr. Forcke (Cæsar & Lorenz), *Pharm. Centralhalle*, 1890, 626.

Estimation of Acetanilide in Phenacetine.—The method is based upon the different solubilities of the two in water. If one grain acetanilide be agitated for one-half hour with 200 cc. distilled water at the ordinary temperature a clear solution will result; if phenacetine be treated in the same manner only 0.13 grain will dissolve. In mixtures of the two treated as above, to the insoluble part is added 0.13 gm., the sum indicating the phenacetine present in the mixture, while the acetanilide is obtained by difference.—Dr. H. Will, *Apoth. Ztg.*, 1890, 652.

Detection of adulterated bees-wax.—The method of the German pharmacopœia is as follows: 1 gm. wax with 10 cc. water and 3 gm. sodium carbonate is heated to the boiling point for 15 minutes;

after cooling, the wax separates above the liquid, which should be only opalescent. In the presence of Japan wax, stearic acid or resin, the wax forms with the soda solution an emulsion, from which, after even a day's time, the wax does not separate, nor does the solution become almost transparent. Dr. H. Röttger states that tallow also prevents the separation of the wax and the obtaining of an almost transparent solution; mixtures which he made would indicate that 2 per cent. Japan wax, stearic acid or resin could be detected by an abnormal emulsion; tallow could only be detected if 5 per cent. or more was present.—*Chemiker Ztg.*, 1890, 1474.

ABSTRACTS FROM THE FRENCH JOURNALS.

TRANSLATED FOR THE AMERICAN JOURNAL OF PHARMACY.

PREPARATION OF SYRUP OF TOLU.—M. Barnouvin (*Répert. de Phar.*, Nov. 10), reviews the various causes to which, from time to time, have been attributed the disagreeable benzinic odor often noticed in tolu preparations which have arrived at a certain age. After a good deal of experimentation, he concludes that the change arises either from the use of too much heat in the preparation of the syrup, or from the use of an indifferent quality of tolu. With too much heat, as in using an open fire instead of the water-bath, as directed by the Codex, a certain amount of dry distillation goes on which produces a small quantity of toluene; hence the benzinic odor. Concerning the other cause cited, M. Barnouvin says: "Balsam of tolu of inferior quality, which is poor in cinnamic acid, may undergo this transformation, and I have observed dry, friable samples to be almost deprived of balsamic constituents. Such a balsam, under the influence of heat, is transformed into a soft, resinous mass well calculated to retain caloric. This is the more exposed to the modification cited, from the fact that, being poor in aromatic principles, long exposure to heat is necessary for preparation."

A DIGITALIN MIXTURE was prepared by M. Carles, at the request of several physicians; his formula is: Chloroformic digitalin of the Codex, 20 mgm.; alcohol, 60 per cent., 10 gm.; chloroform water, 90 gm. The digitalin is triturated with a small quantity of white sugar; the alcohol is then added, and, afterward, the chloroform water. To get an immediate, complete and stable solution the above order of mixing must be strictly adhered to. Each tea-spoonful of the mixture will contain 1 mgm. of digitalin. It keeps

well and for a long time. If sweetening is necessary, a portion of the chloroform water may be replaced by simple syrup.—*L'Union Phar.*, October.

DOSSES OF EXALGIN.—In a communication to the *Académie de Médecine*, Oct. 7, Dr. Desnos said that the first doses of this substance should be limited to 25 cgm. each, to be repeated three or four times daily. The daily quantity may be increased progressively to 1.50 or 1.75 gm. The author thought exalgin excellent in facial, anæmic, syphilitic and visceral neuralgias, nephritic colic, neuralgia of the limbs and muscular neuralgia, but of little service in cephalalgia (diffuse), migraine and articular rheumatism.

PYRIDINE IN BLENNORRHAGIA.—Rademaker's formula is: Pyridine, 6 to 8 drops; distilled water, 90 gm. According to the statement of the author, one urethral injection of this mixture daily, for 3 or 4 days, cures the condition. Dr. Rademaker says that pyridine is the most efficacious agent against blennorrhagia now known.—*La Terapia Moderna*, iv, 1890, 335.

DEATH FROM COLCHICINE.—Dr. Sprega, *Gaz. degli Osp.*, Oct. 1, cites the case of the death of a woman for whom a pharmacist dispensed colchicine instead of cotoine.

ACONITINE POISONING.—At the October meeting of *Soc. de Méd. et de Chir. de Bordeaux*, Oct. 10, Dr. Vergely cited a case of intoxication in a patient who was taking 2 to 3 granules, daily, of Duquesnel's crystallized aconitine. The man's condition became disquieting, but he did not succumb. Drs. Arnozin, Mandillon and Moreau cited cases of the same symptoms and results following the ingestion of granules, containing 1 to $1\frac{1}{4}$ mgm. of the same preparation.

EXAMINATION OF IODOFORM GAUZE.—“It is well to assure ourselves that iodoform gauze contains no coloring matter, which, while making it more attractive to the eye, injures its quality. Gauze treated with ether gives up all of its iodoform, and should become white. In solutions of caustic soda a good iodoform gauze holds its yellow color, while the dyed article turns gray, reddish or chestnut.”—M. Peccatt in *Répert. de Phar.*, Nov. 10.

ALTERABILITY OF DIURETINE.—This substance is decomposed by all acids, even carbonic acid. Exposed to the air it becomes partially

insoluble, making it necessary to treat it with caustic soda. Even in solutions, carbonic acid acts upon diuretine, and the mixtures become cloudy on account of the precipitation of theobromine. Not only weak acids, but such salts as the biborates, bicarbonates and dimetallic phosphates decompose diuretine; hence, we cannot use it with fruit syrups, or with soda bicarbonate. There is no advantage in giving theobromine transformed into diuretine, since, on reaching the stomach, it is decomposed by the gastric juice. It would be preferable to give theobromine in cachets, or by enema. M. Lambert, *Jour. de Ph. et de Ch.*, Oct. 15.

EXAMINATION OF AN INTESTINAL PRODUCT.—M. Balzer, a pharmacist of Blois, writes to the *Répert. de Phar.*, of Nov. 10, that a patient, on the advice of several physicians brought to him an intestinal product for analysis. It consisted of a brownish strip of mucoid substance measuring 80 x 3 centimetres. An examination with the microscope showed some sparse epithelial cells, a small quantity of blood globules and some of the detritus of digestion. Treatment with ether, and evaporation gave a somewhat abundant residuum of fatty matter, and on calcination it yielded a very small quantity of ash. All of the substances were confined in a sort of net-work, apparently formed of incompletely digested albuminous matter. Evidently this substance was unlike blood serum; like egg albumen it was coagulable with ether, which would have been impossible after a commencing putrid decomposition, that is, after ammoniacal alkalinization. Hence, it was concluded that the substance had been secreted by the intestinal glands, and had become detached, carrying away a thin mucous layer, whose separation had given rise to a slight hemorrhage.

NOTES ON THE VULCANIZATION AND DECAY OF INDIA-RUBBER.¹

BY WILLIAM THOMSON, F.R.S.ED., F.C.S.

Under ordinary conditions india-rubber for vulcanizing is usually mixed with sulphur and heated to a high temperature, when chemical combination takes place between the sulphur and the rubber, producing a much more valuable compound for ordinary purposes than unvulcanized rubber; the former remaining soft at very low

¹ Read before the British Association, Leeds Meeting, Section B. Reprinted from *Chem. News*, Oct. 17, 1890, p. 192.

temperature and firm at high temperatures, whilst the latter becomes hard and quite plastic respectively at those temperatures.

■ In making cloth for water-proof garments another method is employed for vulcanizing the rubber, viz., by wetting its surface with a mixture of somewhere about 5 to 10 parts of chloride of sulphur dissolved in 100 parts of bisulphide of carbon, and then heating the fabric gently to evaporate away the excess of these substances. The rubber-covered cloth cannot be heated to a high temperature like the rubber alone, because the heat would be liable to injure the cotton, silk or wool of the fabric, or destroy or injure the colors.

The bisulphide of carbon softens and penetrates the fine layer of rubber, carrying with it the chloride of sulphur dissolved in it, and it is generally supposed that the chloride of sulphur breaks up the sulphur combining with the rubber, producing vulcanization, and the chlorine combining with the hydrogen producing hydrochloric acid, which is liberated. This reaction is clearly not the correct one, and it is probable that the reverse is more in accordance with the facts—viz., that the chlorine of the sulphur chloride combines with the rubber, producing vulcanization, leaving the sulphur in the free state or only partially in combination with the rubber, because in rubber vulcanized by the cold process I have found free sulphur to be present.

From a piece of rubber-covered cloth I separated the rubber and submitted it to analysis by mixing it thoroughly in small pieces with pure sodium carbonate and igniting, then dissolving the whole in water, and adding to it peroxide of hydrogen previously treated with excess of barium chloride (to separate sulphuric acid or sulphates.) The peroxide ensures the conversion of the lower oxides of sulphur into sulphuric acid, whilst the excess of barium chlorides precipitates the sulphuric acid in the solution, which is then weighed as barium sulphate.

Another portion of the made-up solution was neutralized and the chlorine present titrated. The rubber previous to ignition, as above described, had been well boiled in water and dried to separate any hydrochloric acid which might be present, but only a faint trace of chlorine compound could be thus separated from the rubber.

The total sulphur present in the rubber amounted to 2.60, and the total chlorine to 6.31 per cent.

The yellow-coloured sulphur protochloride is best adapted for vul-

canizing because it does not act too strongly upon the rubber, whilst the dark colored chloride of sulphur, containing, as it does, a large quantity of the higher chlorides of sulphur, is liable to render the rubber quite hard by vulcanizing it too much. The theory generally adopted to explain this is, that these higher chlorides break up easily, liberating their sulphur, which thus combines in greater quantity with the rubber; but my experiments and analyses prove that it is chiefly the chlorine and not the sulphur of the chloride of sulphur which produces the vulcanization.

A rubber substitute much used at present is produced by acting on vegetable oils, such as rape, linseed, etc., with a mixture of chloride of sulphur and bisulphide of carbon. The oil becomes converted into a solid substance resembling india-rubber to some extent, but being much more brittle. This body is now used in large quantity for mixing with india-rubber for the purpose of cheapening its production. On analysis of some samples of this material I have invariably found that it contained a much greater proportion of chlorine than of sulphur, and this process, therefore, is a vulcanization by chlorine rather than by sulphur.

Recently I analyzed three samples of rubber substitute, the one termed "special," another "spongy" india-rubber substitute, the third being similar to the first in appearance. The first contained of sulphur 3.4 and of chlorine 7.6 per cent.; the second contained of sulphur 4.56 and of chlorine 8.22, and the third 2.67 of sulphur and 7.90 of chlorine per cent.

These rubber substitutes contain considerable quantities of oily matters soluble in ether, which I have also found to be chlorine and sulphur compounds of the oils. The first yielded 20.0 per cent., the second 14.3, and the third 11.5 per cent. of these thick oily matters soluble in ether. This oily substance from the first sample contained 2.6 per cent. of sulphur and 6.1 per cent. of chlorine, whilst that from the second contained 2.97 and 6.87 per cent. of sulphur and chlorine respectively.

Some rubber manufacturers regard this oily matter as injurious to the rubber and reject any substitute which contains any considerable proportion of it. I have found, however, by experiment that this oily compound instead of acting injuriously on india-rubber, actually acts as a preservative of it; some rubber threads were smeared with this oily extract, some with ordinary (unvulcanized)

rape oil, and some left untreated: these were put into an incubator at 150° F. for a few days, when it was found that the oil-treated rubber was quite soft and rotten, whilst the other two had remained sound; after a few days more, the original rubber threads had become quite rotten, whilst the threads smeared with the oily part of the vulcanized oil remained quite sound.

The first and second samples of rubber substitute were examined for soluble chlorides or hydrochloric acid, by boiling in water; the first gave 0.18 per cent. of chlorine soluble in water, and the second 0.05 per cent.

It has been known for some time that copper salts exert a most injurious influence on india-rubber; copper salts are sometimes used in dyeing cloths which are afterwards employed for water-proofing with india-rubber, and it seems quite astonishing what a small amount of copper is required to harden and destroy the rubber, and the destructive effect of copper is further enhanced if the cloth contains oily matters in which the copper has dissolved.

As an example, here is a piece of cloth alleged to have damaged the thin coating of india-rubber on it: I found it to contain copper, and with a view of demonstrating this point, I took one piece in its original condition; to the end of this I pasted a similar piece of the cloth from which the oily and greasy matters had been removed by ether, and to the end of this again I pasted another piece of the same cloth from which I had removed both oily and greasy matters and copper; these three pieces joined end to end into one were then coated in the usual way with india-rubber, and then hung in an incubator at 150° F.; in the course of a few days the rubber on the original cloth had become soft, and it then hardened and became rotten and useless; the second piece from which the greasy matters had been removed then became quite hard and rotten, whilst the part from which both greasy matters and copper had been removed has remained in a perfectly elastic and good condition.

Professor Dewar observed accidentally that metallic copper when heated to the temperature of boiling water in contact with the rubber exerted a destructive effect upon it. With a view of finding whether this was due to the copper *per se* or to its power of conducting heat more rapidly to the rubber, I laid a sheet of rubber on a plate of glass and on it placed four clean discs, one of copper, one of platinum, one of zinc, and one of silver; after a few days in an incubator at

150° F., the rubber under the copper had become quite hard, that under the platinum had become slightly affected and hardened at different parts, whilst the rubber under the silver and under the zinc remained quite sound and elastic. This would infer that the pure metallic copper had exerted a great oxidizing effect on the rubber, the platinum had exerted a slight effect, whilst the zinc and silver respectively had had no injurious influence on it. A still more curious result was this, that the rubber thus hardened by the copper contained no appreciable trace of copper; the copper, therefore, presumably sets up the oxidizing action in the rubber without itself permeating it.

I have pleasure in acknowledging the assistance rendered to me in this investigation by my assistant, Mr. Frederick Lewis.

THE ALCOHOL TEST FOR PURE CASTOR OIL.¹

BY J. ARTHUR WILSON.

Castor oil differs in many respects from most fixed oils, especially in consisting largely of the glyceride of ricinoleic acid, which is soluble in absolute alcohol. Hence this reagent can be used for the detection of impurities in castor oil. Like most other tests of a similar kind, it is not of much use for the detection of small quantities of foreign oil, owing to the solvent action of the dissolved castor oil on the small proportion of foreign oil that may be present.

The British Pharmacopœia directs that pure castor oil shall be soluble in an equal measure of absolute alcohol and twice the measure of rectified spirit.

According to Mr. Allen ("Commercial Organic Analysis," vol. ii, 128) this is correct at 30° C., providing spirit of exactly 0.838 gravity be used. I have examined a number of samples of both commercial and medicinal castor oil, strictly at 30° C., and by a spirit of exactly 0.838 specific gravity, and find that at exactly 30° C. the oil is not completely soluble, but that the temperature of solution varies between 38° and 43° C. I may say that the oils I used satisfied all other requirements as to purity.

In carrying out the alcohol test, it is best to operate as follows: One measure of the castor oil under examination is mixed thoroughly with two volumes of spirit of exactly 0.838 specific gravity, and then

¹ *Chem. News*, Oct. 31, 1890, p. 215.

heated, stirring well with the thermometer till complete solution. In the case of genuine castor oil this will be between 38° and 43° C., possibly lower than the former; whilst if any foreign oil be present, the temperature will be much higher; and in gross adulteration, some oil may not be dissolved even at the boiling point of the mixture.

TOTTINGTON, Oct. 20, 1890.

DEXTROCOCAÏNE.¹

BY A. EINHORN AND A. MARQUARDT.

According to Einhorn's formula for cocaïne, two asymmetrical carbon-atoms are present in the molecule; if this is correct, similar optical isomerides should exist to those of atropine. Experiments made to convert cocaïne directly into an isomeric base have not been attended with success, but similar experiments with ecgonine, one of its decomposition-products, have given the desired result, for this compound and all its derivatives, including cocaïne itself, are converted into dextro-ecgonine by warming with an aqueous solution of potassium hydroxide on the water-bath.

The best material for the preparation of dextro-ecgonine is the mixture of alkaloids obtained as a bye-product in the preparation of cocaïne, which must be warmed with the aqueous potash for 18-24 hours. Dextro-ecgonine, $C_9H_{15}NO_3$, crystallizes in tables which seem to be hemimorphous, and melts at 254°. On heating with acetic acid saturated with hydrogen chloride, it yields the same anhydroecgonine as is obtained from ordinary ecgonine, whence it would appear that the optical activity is due to the asymmetrical carbon-atom in the side chain. The *hydrochloride*, $C_9H_{15}NO_3 \cdot HCl$, crystallizes from alcohol in monoclinic prisms; an aqueous solution containing 4·4 per cent., in a tube 2 dcm. in length, rotated the plane of polarization 1·6° to the right. The *aurochloride*, $C_9H_{15}NO_3 \cdot HAuCl_4$, forms small, yellow plates, which melt with decomposition at 220°. Its *methyl ether*, $C_{10}H_{17}NO_3$, obtained by suspending dextro-ecgonine in methyl alcohol, and passing in hydrogen chloride, crystallizes from alcohol in prisms melting at 215°.

¹ Ber., 23, 468-474 and 979-988. Reprinted from Jour. Chem. Soc., June and August, 1890.

Dextrococaine is prepared by heating the foregoing methyl ether with benzoic chloride. It is an oil, which gives a beautifully crystalline *hydrochloride*, $C_{17}H_{21}NO_4HCl$, melting at 205° , whereas ordinary cocaine hydrochloride melts at 181.5° . A solution of 1.9 per cent. of this salt in dilute alcohol of the same strength as employed by Antrick (Abstr., 1887, 506), in a tube 2 dcm. in length, rotated the plane of polarization 1.5° to the right. The physiological properties of dextrococaine are similar to those of cocaine, but its action takes places more quickly, and is more transient.

The authors suggest that the "methylcocaine" and "methyleneccgonine," prepared by C. Liebermann and F. Giesel from mother liquors obtained in the manufacture of cocaine, are really dextrococaine and dextroecgonine, which are formed by the action of an alkali on ecgonine during the evaporation of the mother liquors. For the better characterization of the compounds, a number of new derivatives have been prepared. Dextrococaine is best separated from ordinary cocaine by means of the hydrochloride. The aurochloride of dextrococaine, $C_{17}H_{21}NO_4HAuCl_4$, is deposited from dilute alcohol in small, lustrous, yellow crystals melting at 149° . The platino-chloride is very insoluble in water; it crystallizes from dilute alcohol in pale-yellow, slender needles which melt at 218° . The hydrobromide is obtained from hot water in the form of long, prismatic needles. The iodide and nitrate crystallize in lustrous leaves; both they and the sulphate are sparingly soluble in water. Dextrococaine is liberated from its salts by the action of sodium hydroxide; it is at first obtained as an oily liquid, which readily solidifies on adding a crystal of the substance; it crystallizes in prisms melting at $43-45^\circ$. Benzoyl dextroecgonine hydrochloride, $C_{16}H_{19}NO_4HCl$, is formed by heating dextrococaine with water for 48 hours; the solution is freed from benzoic acid by shaking with ether, and the hydrochloride precipitated on addition of hydrochloric acid; it crystallizes from water or alcohol in needles, or in short, broad, well-developed crystals melting at $244-245^\circ$. The aurochloride of ethyl dextroecgonine, $C_{11}H_{19}NO_3HAuCl_4$, is deposited from dilute alcohol in orange-colored crystals melting at 115° . The corresponding propyl compound has a similar appearance and melts at 132° . The isobutyl compound, $C_{14}H_{23}NO_3HAuCl_4$, crystallizes in orange-colored, transparent leaves melting at 130° . The aurochloride of amyl dextroecgonine is at first oily, after some time it solidifies and

crystallizes from absolute alcohol in yellow prisms melting at 152° . Ethereal salts of benzoyldextroecgonine are formed by the action of benzoic chloride on the above ethereal salts. *Ethylbenzoyldextroecgonine*, $C_8H_7NMe\cdot CH(OBz)\cdot CH_2COOEt$, crystallizes from ether in white prisms melting at about 57° . The hydrochloride is deposited from hot water or absolute alcohol in transparent triangular leaves melting at 215° . *Propylbenzoyldextroecgonine hydrochloride* crystallizes from water or alcohol in white prisms melting at 220° . The hydrochlorides of the corresponding *isobutyl* and *amyl* compounds crystallize in interlaced needles melting at 201° and 217° respectively. *Amylbenzoyldextroecgonine hydrobromide* is comparatively insoluble in water, and crystallizes in white leaves. The above salts are all dextro-rotatory, and have a physiological action similar to that of cocaine. The authors have prepared a fresh specimen of dextroecgonine, from methyldextroecgonine; on recrystallization from methyl alcohol it melts at 257° , instead of 254° , as previously given; Liebermann and Giesel found 264° as the melting point of their "methylecgonine."

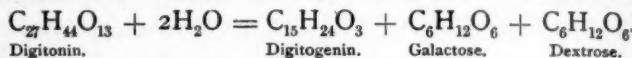
COMPOSITION OF DIGITONIN.¹

BY H. KILIANI.

According to Schmiedeberg, commercial digitalin contains, in addition to digitoxin, its most important pharmacological constituent, three glucosides, namely, digitonin, digitalin and digitalein, the first in greater amount, and when heated with dilute acid, it yields a substance which reduces Fehling's solution, and also a crystalline compound insoluble in water, which he named digitogenin. The author dissolved 1 part of commercial digitalin in 10 parts of water, added 1 part of concentrated hydrochloric acid (sp. gr. 1.19), and heated the mixture for six hours on the water-bath. By this means, a solution and a light-gray precipitate were obtained. The solution contained about equal quantities of two glucoses, which were identified by means of the melting points of their osazones and their behavior when oxidized, as galactose and dextrose, respectively. The precipitate of digitogenin was crystallized from alcohol, and found to be rather more than equal in amount to either of the two glucoses. It has the constitution $(C_6H_8O)_x$, probably $C_{15}H_{24}O_5$.

¹ Ber. 23, 1555-1560. Reprinted from Jour. Chem. Soc., Sept., 1890, p. 996.

Digitonin has, therefore, very probably, the composition $C_{27}H_{44}O_{13}$, and its hydrolysis is expressed by the equation—



This would require a ratio of 1.4 : 1 : 1 between the weights of digitogenin, galactose and dextrose formed; that actually found is more nearly 1 : 1 : 1; but it must be remembered that at the moment of hydrolysis digitogenin is much more easily attacked than galactose and dextrose, and very readily yields resinous products. An analysis of the raw material agreed well with the formula $C_{27}H_{44}O_{18}$; not so, however, did Schmiedeberg's analysis.

Digitogenin.—The following details may be added to Schmiedeberg's data regarding this substance. One part requires for solution 35 parts of boiling or 100 parts of cold 93 per cent. alcohol, and 20 parts of boiling or 30 parts of cold chloroform, and 30 parts of cold glacial acetic acid; it is insoluble in water and aqueous alkalies. It seems to form a compound containing chloroform of crystallization, which loses its chloroform only very slowly at 110°. With alcoholic potash, it forms a crystalline potassium compound, strongly alkaline, and little soluble in alcohol. It forms no stable compounds with barium hydroxide or phenylhydrazine, but is attacked by mineral acids and oxidizing agents.

ON THE POISONOUS ACTION OF SULPHUROUS ACID AND ITS SALTS.¹

By DR. L. PFEIFFER.

Divergent opinions have been expressed as to the toxic action of the sulphites. Some have found them well borne in large and continuous doses, and cases have been recorded in which from 200 to 600 grains have been given without evil effects following. On the other hand, full doses have in some cases caused sickness, diarrhoea and general digestive disturbance, and P. Polli and Faralli noticed general relaxation of the muscles and weakness follow from their use. Pfeiffer points out that the commercial sulphite always contains a considerable portion of sulphates, and thinks this accounts to a certain extent for the different effects of the sulphites which have been recorded.

After a history of the results obtained by previous observers, he

¹ *Archiv f. Exper. Path. und Pharm.*, xxvii; reprinted from *Med. Chronicle*, October, 1890.

gives an account of the experiments he has made to ascertain the exact effects of pure sulphite of sodium, and the conclusions he has arrived at with regard to the action of this salt and of sulphurous acid. He finds that the sulphites exert a distinctly poisonous action on both cold and warm-blooded animals, but they are so rapidly changed into sulphates that, unless very large doses be given, a sufficient amount of unchanged salt is not present to produce a poisonous effect. 96.5 per cent. of sulphite of sodium given appears in the urine as sulphate. When large quantities are administered, 85.8 per cent. passes out in five hours—the maximum excretion of both sulphate and sulphite taking place in the second and third hour, but more sulphite being excreted in the third hour. By the fourth hour, all the sulphite has been converted into sulphate. The digestive disturbance which has been found by some to follow the medicinal use of sulphites is probably due to the sulphurous acid set free by the acid of the stomach.

In man, small quantities in the air breathed (under .5 per 1,000) cause spasm of the glottis and cough; and prolonged respiration of air containing a very small proportion of the gas will at times give rise to chronic catarrh and inflammation of the respiratory organs.

Watery solutions of SO_2 produce a marked and extensive caustic effect. A solution of .5 to 1 per cent. causes excessive and extensive gastritis, and a 5 per cent. solution corrodes deeply when injected into the stomach of animals, causing death in three to five minutes. It has distinctly a more marked effect than sulphuric acid, of which solutions of from 1 to 20 per cent. are not invariably fatal under similar conditions.

It is easy to understand therefore that, though the sulphites themselves may be without influence on the gastro-intestinal mucous membrane, the sulphurous acid given off, owing to decomposition in the stomach, may lead to catarrhal condition, sickness and diarrhoea. Bernatzik noticed this effect after doses of from 15 to 60 grs. of various sulphites, and also after solutions of sulphurous acid, and Pfeiffer himself, after taking only $7\frac{1}{2}$ grains of sulphite of sodium, suffered from pain, discomfort and eructations. Sulphurous acid, like other acids, can be shown, experimentally, to interfere with the action of ptyalin and trypsin, but not with that of pepsin; but the sulphites probably have no other effect on digestion than that of interfering slightly with its rapidity.

Pfeiffer concludes by pointing out that sulphites are sometimes added to wine in such quantity as to be capable of producing injurious results. Kämmerer, in 80 specimens of wine examined, found 16 in which sulphites (from .0017 to .0093 per cent.) had been added.

List detected sulphites in a large number of French wines, the amount varying from .0009 to .0135 per cent.

Since .08 gm. of SO_2 , even when much diluted, will cause irritation of the digestive organs, the presence of sulphites in wine may be injurious if it contain a greater quantity than .08 gm. in the litre.

The addition of wine to conserves may also be productive of unpleasant effects on the digestion.

PHARMACY IN THE SOUTH.

BY HARRY VIN ARNY, PH.G.

Read at the Social Meeting of the Alumni Association, Philadelphia College of Pharmacy, November 13th.

As an introduction, permit me to say that this paper could be termed, with more propriety, "Pharmacy in New Orleans," it being a view of pharmacy taken from a stand-point solely Orleanian. But, as New Orleans is the leading city of the South and most thoroughly Southern, it can, perhaps, be regarded as typical.

The general aspect of Pharmacy in the South is about the same as that in the North; the Southern pharmacist partaking of the same annoyances and worries, obtaining the same benefits and making about the same living as does his Northern brother. It is only in local coloring—the stage-setting and *dramatis personæ*, as it were—that there is any noticeable difference, and it is this phase upon which I will chiefly expatiate.

As to general aspects, suffice it to say that in this city of 241,000 inhabitants there are four wholesale and 155 retail drug-stores, giving occupation to 382 registered persons, whose respective abilities range along the whole gamut of excellence, from good to bad. The average is not as high as in Philadelphia—a natural sequence to the lack of proper facilities for pharmaceutical education which has heretofore existed in this community. But the want has been filled; the Pharmaceutical Department of Tulane University, while still an infant, is a lusty one, and its class of 1890 was a body of young men as well trained in pharmaceutical knowledge as any similar class in the country; so we soon will have attained as high an average as anywhere else in the country.

The prevailing prices for medicinal commodities are about the same as in the North, but the cutting on proprietary articles is not so prevalent. We are fortunate in possessing in this State a just and satisfactory pharmacy law, enforced by a conscientious and intelligent Board.

For the information of those students thinking of settling down this way, I will say that the diplomas of the P. C. P. are recognized, as well as those from all other reputable Colleges.

It is the odd customs peculiar to this place that make it so charming a stopping-place to the Northern tourist, it seeming to such a foreign country. Its large, airy houses, its lovely rose gardens, its peculiar and far-famed institution, the Carnival, are too well known for description here (besides not entering into the subject of this paper); but the odd customs extend also into the province of pharmacy, and of them the most peculiar is the institution known as Lagniappe (pronounced Lan-yap). Lagniappe is something given to the purchaser in a retail store, a bribe to secure his future patronage. It is a custom extending back to time immemorial, its origin being accounted for by the following legend, which is given for what it is worth: Years ago, in the old French Quarter, there lived an old lady who had, as a pet, a monkey, glorying in the high-sounding name Lagniappe. The monkey was a well-known character in the neighborhood, and had a decided taste for sweet things; so, when the old lady went to market or to the grocery or drug-store she would always ask for an orange, cake or candy, "for Lagniappe." Then the children in the neighborhood took it up, although, it is feared, the monkey obtained but a small portion of the good things given "in his name," for, after he had been gathered to his fathers, and even to this day, we are asked to give gum and candy "for Lagniappe." The custom is so firmly fixed, that there seems no danger of its ever being abolished, despite the opposition of store-keepers. It is a practice entailing considerable expense upon the merchant, personal observation showing that in our establishment the cost of Lagniappe daily given away is about one to two per cent. of the gross sales. Still, there is no objection to humoring the children; but when a man buying five cents' worth of Castor Oil wants "Lagniappe" for the baby, or a greasy urchin says "gimme Lagniappe" after paying ten cents for five two-cent postage-stamps that have been neatly wrapped up for him, it seems time to call a halt.

Then the negro—that never-failing source of interest and amusement to a student of human nature. Not the indolent, insolent young ones, born since the war, and given just enough education to ruin them; but the respectful, illiterate, ante-bellum negroes, with their quaint ways and quainter sayings. Alas! they are a type fast passing away.

The old-time negro is well-learned in "yarbs," and, coming to the drug-store for such panaceas as Sampson Snake Root, Jimson Weed and Dogwood, regards the presiding genius of the place with the same degree of awe and respect as was accorded the alchemists by the ancients.

Then, too, the drug-store is invested with an air of magic to them, as it is the repository of infallible Voodo charms. Voodoism is a relic of African barbarism, not entirely eliminated even by centuries of Christian influence. Almost every old-time negro is a firm believer in black art, in charms, and in philters (not the kind of which Professor Remington has told you, but those exerting potent influence upon the affections). Superstition remains in spite of all. Chief among the voodo charms is Lodestone with a little steel dust; "She Lodestone" is preferred, the difference in gender being entirely unaccountable to me.

Next in "saving grace" comes Grains of Paradise, those pungent seeds coming to us from Guinea, popularly supposed to possess almost as much virtue as a grave-yard rabbit's ear; and of these three great charms at least one can be found in the pockets of every old-time negro.

We are spared one annoyance of the Northern pharmacist by the disuse of pennies—coins which are almost entirely tabooed here. Efforts have been made by some of our merchants (for what reason is beyond my ken) to introduce them, by pricing their goods at figures whose units are some other than five or naught; but their efforts have been of small avail, as the ladies have voted coppers an annoyance, immediately exchanging them for postage stamps or some penny device. In ordinary business transactions, the penny never enters into the question, twenty-six or twenty-seven cents being settled at twenty-five; twenty-eight or twenty-nine cents at thirty cents.

Up to recently, we never accepted pennies at our establishment, but the introduction of chewing-gum in penny packages gave rise to a slight demand on the part of some thrifty urchins for that commodity in centesimal quantities, which is rather unwillingly granted, as we are as conservative regarding the innovation of coppers as are other Southerners.

We have three denominations of currency in use here that are not known in Eastern commerce—the "quartee," the "picayune" and the "bit."

The "quartee," a denomination original to, and used only in, the French quarter, represents two and a half cents of United States currency, and the term is used in the absence of pennies by those so poor as to desire their nickel to go as far as possible. Such, entering a store, will ask for a "quartee" of this and a "quartee" of that, giving a five-cent piece in payment.

Two "quartees" make a "picayune," a term used to express the value of five cents, and in universal use in this city, one of our leading dailies being so called. Both Webster and Worcester state that a "picayune" is worth six and a quarter cents, a statement perhaps true in other sections of the country, but not so here.

The last imaginary denomination of our currency is the "bit," value twelve and a half cents; and if, on purchasing a box of Blank's Pills, you are told they are worth "two bits," don't be surprised, but hand out your silver quarter.

Such are some of the oddities of the drug trade in our well-beloved Crescent City, the city which has been accorded the honor of entertaining the American Pharmaceutical Association next May. I advise all who can possibly do so to take advantage of the opportunity of visiting New Orleans in the month in which she is most gorgeous, ensuring them a hearty Southern welcome and a very pleasant stay.

MINUTES OF THE PHARMACEUTICAL MEETING.

PHILADELPHIA, November 18, 1890.

On motion, Mr. Alonzo Robbins was asked to preside.

The minutes of the last meeting were read and approved.

The Registrar announced that the Index Catalogue of the Library of the Surgeon-General of the United States had been presented by Dr. John S. Billings, of Washington; and the *Jahresbericht für Agricultur-Chemie* had been received for the library.

Professor Maisch read a paper, written by Gustavus Krauss, Ph.G., of Memphis, Tenn., upon *Solanum carolinense*, commonly known as horse-nettle, from the spines with which it is covered. The plant has recently attracted some

attention as a remedy in convulsive diseases (see AMER. JOUR. PHARM., 1889, p. 552).

Professor Trimble read a paper upon the California soap plant, the *Chlorogalum pomeridianum*, and exhibited specimens of the bulb. Reference was made to the bulbs preserved in the College Cabinet, donated by Mr. J. J. Brown thirteen years ago; also to the uses of the bulbs as described in previous volumes of the AMERICAN JOURNAL OF PHARMACY (1877, p. 569, and 1878, p. 589).

A paper upon *tests for the hypophosphites* was read by F. X. Moerk, Ph.G. In the discussion which followed, reference was also made to certain organic substances, like arbutin, which produce, in alkaline solution, with phosphomolybdic acid, a blue color similar to that described in the paper.

Mr. Moerk also read a paper upon the *detection of silver salts* in the presence of mercurous salts, and stated that he had not seen any notice of the power of the mercurous salts to prevent the usual reaction of the former with hydrochloric acid and ammonia.

Mr. C. A. Heinrich exhibited a specimen of Java Cinnamon which he had obtained from a wholesale dealer in spices in this city; the similarity of the flavor and odor to that of Ceylon Cinnamon was quite remarkable. Professor Maisch said that *Cinnamomum zeylanicum* had been cultivated in Java, and that the bark was sometimes sent into the market deprived of the corky layer, so as to resemble Ceylon cinnamon in appearance. Reference was also made to some varieties of cinnamon which are held in high esteem by the Chinese (see this Journal, October, p. 497), and some of which may be procured in this country from Chinese merchants.

The papers were referred for publication, and the meeting adjourned.

EDITORIALS.

The *Decennial Index* for the last ten volumes of THE AMERICAN JOURNAL OF PHARMACY is in course of preparation, but it cannot be completed for some weeks to come, and will probably not be ready for issue for several months. In this connection, we desire to extend our thanks to our contributors, as well as to our readers, and to bespeak for the JOURNAL a continuance of their friendly and valued interest, and a further extension of its influence and usefulness.

The California College of Pharmacy holds its sessions during the summer months. Its eighteenth annual commencement took place at San Francisco, October 28 last, when the degree of Ph. G. was conferred upon 15 successful candidates by the President of the University of California. Addresses were made by President Melvin, of the California Pharmaceutical Society; by H. E. Highton, Esq., by Professor Runyon, and by B. A. Mardis, of the graduating class. Two prizes were awarded, a gold medal to Stephen Cleary, and a microscope with attachments to John V. Leithold.

The Detroit College of Medicine has organized a *Department of Pharmacy*, in which lectures are to begin early in January. Michigan has already a well-equipped and well-known Pharmacy School connected with the State University at Ann Arbor.

Tablets of Potassium Chlorate and Ammonium Chloride.—The notice in our August number, reporting the spontaneous detonation of tablets of the com-

position indicated has directed attention to other cases of the spontaneous decomposition of a mixture of the two salts. It is very likely that the first step in the reaction is the mutual interchange, wholly or in part, of the acids and bases, resulting in the formation of potassium chloride and ammonium chlorate. The latter salt is readily decomposed under the influence of a slightly elevated temperature yielding chlorine, nitrogen and various compounds, and its spontaneous detonation was noticed by Mitscherlich fifty years ago. But we desire more especially at the present time to direct attention to the tablets mentioned as the probable cause of some mysterious fires.

We have before us a special report dated October 24, 1890, made by Inspector Wm. McDevitt to the Philadelphia Fire Underwriters, in which the origin of a fire which occurred in this city, September 15, in the laboratory of Mulford & Co., is attributed to the accumulation, upon heated steam pipes, of dust from a mixture of potassium chlorate and sugar; and in regard to another fire, on October 15, following an explosion, the cause of which was not ascertained, it is stated that the firm, at times, had made tablets of potassium chlorate and ammonium chloride. The report further says, that "in September, 1881, your Inspector witnessed the remains of a fire in the store of Wyeth & Brother, on West Walnut Street; the fire having originated among a mass of tablets composed of chlorate of potash and muriate of ammonia; from which, owing to timely discovery, only a small loss resulted."

These observations have furnished, among others, a clue to a mysterious fire which occurred in the store of Finlay & Brunswig, New Orleans, January 23, 1889, which was effectually extinguished by the gases generated from the chemicals near the point of ignition. In view of the importance, to apothecaries and druggists, of the subject, we copy the details from a communication by John E. Whiting, to "The Standard," of November 15, 1890, published at Boston; these details are as follows:

"We found that the fire had originated on a high shelf which contained the following articles, viz: some tin boxes filled with carbonate of magnesia, several glass bottles containing chlorate of potash and muriate of ammonia tablets; a wooden box containing carbonate of magnesia and a paper bag containing finely ground anise seed on top of the above-named wooden box, while the shelf above was filled with bottles of calcined magnesia. The fire apparently originated on top of the wooden box; as the fire had burned a hole through the cover at one end and had run along the edge of it and spread down the end and one side, and had burnt a portion of the paper bag and anise seed. The blaze had also burned a hole through the shelf above and charred a large portion of the under side of that shelf. The bottles containing the chlorate tablets were broken; while the heat had driven off the chlorine contained in them, as a dense vapor had adhered to the wooden ceiling of the room for quite a distance. It is very evident that the chlorine gases thus liberated had displaced the oxygen of the air to such an extent that they had actually smothered the fire; but the cause of the fire itself was, at that time, a mystery that none of us could solve."

Mr. Whiting now believes it to be "almost self evident that the innocent looking little chlorate tablets must be held responsible as the incendiary in this as well as in the other cases described, an explosion having taken place among

the tablets that set the paper bag containing the anise seed on fire, which continued to smoulder until extinguished by the chlorine gases."

The American Chemical Society will hold a general meeting in the University of Pennsylvania, West Philadelphia, December 30 and 31 next. All chemists, whether members of the Society or not, are cordially invited to be present and to take part in the proceedings. Chemical manufacturers and all persons interested in chemistry will be heartily welcomed at the meetings.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Student's Course in Pharmacy. A Series of Lectures for the Use of Drug Clerks and Home Students in Pharmacy. By W. H. Watson. Nashville, Tenn.: Franc. M. Paul, publisher. 1890. 16mo. pp. 312.

Essentials of Practice of Pharmacy, arranged in the form of Questions and Answers. Prepared especially for the Use of Pharmaceutical Students by Lucius E. Sayre, Ph.G., Professor of Pharmacy and *Materia Medica* of the School of Pharmacy of the University of Kansas. Philadelphia: W. B. Saunders. 1890. 12mo. pp. 179. Price, cloth, \$1; interleaved, \$1.25.

These two little works have made their appearance about the same time and are intended for the use of students, serving in the place of lecture notes, and as aids in reviewing the subject matters pertaining to pharmacy. Obviously, they are merely skeletons that may be utilized partly as a basis for studying theoretical pharmacy, but more especially for re-surveying the field previously gone over. They will both serve a useful purpose in the direction indicated, particularly if supplemented by as many experiments as can be made by the student with the means at his command. Suggestions in this direction might, we think, be incorporated, rendering the books still more useful than they will prove with the present scope. In some respects, a little more care bestowed upon the proof-reading would have prevented certain inaccuracies or inconsistencies; thus we find in the first-named work the plant names given indiscriminately with capital and small initial letters; and in the second work hydrochloric, instead of chloric acid is mentioned as an oxidizing agent, and the list of glucosides includes several principles not belonging to that class of compounds.

A Compend of Pharmacy. By F. E. Stewart, M.D., Ph.G., Demonstrator in *Materia Medica* and Pharmacy, Jefferson Medical College, etc. Third revised edition. Philadelphia: P. Blakiston, Son & Co. 1890. 12mo. pp. 171. Price, cloth, \$1; interleaved, \$1.25.

This quiz-compend has come to hand since the preceding notice was written. The little work is similar in scope and object to the two preceding ones, and is now in its third edition, a former one having been noticed in this Journal four years ago. The tables for converting U. S. weights and measures—customary to metric, and metric to customary—issued by the U. S. Coast and Geodetic Survey Office, have been published in an appendix, and will be found useful for reference.

Commentar zum Arzneibuch für das Deutsche Reich (*Pharmacopœia Germanica*, editio iii), mit vergleichender Berücksichtigung der früheren deutschen u. a. Pharmakopöen, von Dr. Bruno Hirsch, Apotheker in Berlin, und

Dr. Alfred Schneider, Korps-Stabsapotheke in Dresden. Göttingen : Vanden-hoeck & Ruprecht. 1890.

Commentary to the German Pharmacopœia with references to, and comparison with, the former German and other Pharmacopœias.

This promises to become a very useful and practical as well as thoroughly reliable work. It is issued in parts of 64 pages each, of which two are now before us ; they indicate all the good qualities which, on former occasions, we had the opportunity of commanding in connection with several pharmaceutical works of one of the present authors. The work now under consideration opens with an introductory chapter giving a brief account of the new pharmacopœia recently published, and of its general features. Next follows a survey of the changes that have been introduced by the new pharmacopœia, tables being given showing the remedies newly admitted or dismissed ; a long list recording the changes, verbal and others, which have been made in the text ; and similar lists showing the changes in the official reagents, the recognized maximal doses, the specific gravities, and in the poisons and powerful medicines which have to be kept with special precautions. The following chapter describes in a succinct manner the most important operations required for the recognition and examination of the different articles, beginning with specific gravity and the manner of reducing heavy liquids to their proper densities ; the determination of the melting and boiling points, and a brief account of the strength and uses of the volumetric solutions and of the limits of certain important reactions. The commentary proper enumerates the pharmacopœial articles in alphabetical order, as they are contained in the Pharmacopœia, and after giving the complete pharmacopœial text, proceeds with the comments, first giving the chemical formula and combining weight, after which the process of preparation is described, the nomenclature is explained if necessary, and the pharmacopœial requirements for determining the identity and purity of the remedy are discussed, followed by other reactions if deemed advisable or necessary, and by remarks on pharmaceutical uses, precautions for preserving the remedy, and similar practical points. Vegetable drugs receive a similar treatment ; following the text of the Pharmacopœia, we find brief accounts of the parent plants, of the preparation of the drug for the market, of the constituents, reactions, impurities, substitutions, etc.

The work will, without doubt, be carried to completion in the same excellent manner in which it has thus far been rendered ; and it should be mentioned yet that paper and typography are in keeping with the contents.

A Text-Book of Practical Therapeutics, with especial reference to the application of remedial measures to disease and their employment upon a rational basis. By Hobart Amory Hare, M.D. (Univ. of Pa.), B. Sc., Clinical Professor of the Diseases of Children and Demonstrator of Therapeutics in the University of Pennsylvania, etc., Philadelphia : Lea Brothers & Co. 1890. 8vo. pp. 632. Price, cloth, \$3.75 ; leather, \$4.75.

The author states that the object of the book is to provide the physician or undergraduate student of medicine with a reliable guide in the study of therapeutics, or the application of remedial measures for the cure of disease ; and that it has been written because most of the text-books on this subject treat of it as if the student was already a skilled physician or experimental pharmacol-

ogist. The work is divided into four parts, of which the first discusses general therapeutic considerations, viz., the modes of action and of administering drugs; the dosage, absorption and duration of action of drugs; idiosyncrasy; indications and contraindications; and the combination of drugs for a joint effect. The second part treats of the various drugs, both officinal and unofficinal, which are arranged in alphabetical order of their English names, the salts being found under the names of their acids (bromide, carbonate, nitrate, etc.), except the preparations of iron, mercury, etc., which are considered in close succession. Under each head is usually found a brief characterization of the drug, its therapeutic properties and uses, and its administration, mentioning among the preparations also those of the British Pharmacopœia. Of the more important drugs, the physiological action is also discussed, more or less extendedly as their importance seemed to require, and in connection therewith treatment of poisoning, untoward effects, etc. In the third part, remedial measures other than drugs are described, such as *acupuncture*, cold, heat, venesection, etc.; also different foods for the sick, and diet lists for infants. Electricity, which would be looked for in this part of the work, has not found a place here, because its application in therapeutics has outgrown any work save one devoted to that subject alone. Part IV is headed "Diseases," and discusses the remedial and other measures available under varying conditions. Several prominent physicians have contributed a number of articles on diseases to which they have given special attention. A table of doses, an index of drugs and remedial measures, and an index of diseases and their treatment form the concluding portion of the book.

As will be seen from the foregoing, the field covered by the work is a large one, which has been well covered through the terseness and clearness of the statements. The care bestowed upon the book is also shown in the proof-reading, typographical errors being very few in number. Typography and the make-up in general are inviting.

Ointments and Oleates, especially in diseases of the skin. By John V. Shoemaker, A.M., M.D., Professor of Materia Medica, Pharmacology, Therapeutics and Clinical Medicine, and Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia, etc. Second edition revised and enlarged. Philadelphia and London: F. A. Davis, Publisher. 1890. 12mo. pp. 298. Price, cloth, \$1.50.

This work is divided into two parts, treating respectively of Ointments and of Oleates. Each part opens with a comprehensive historical sketch of the introduction and use of the class of preparations, and of their application in diseases of the skin. More particularly are these subjects discussed in an elaborate manner in connection with the oleates, in the more general introduction of which, some twelve years ago, the author had specially interested himself, while Dr. Lawrence Wolff was experimenting upon their production, for pharmaceutical purposes, from the materials then accessible in the market. The book necessarily contains a large number of formulas, and Part I has been materially enlarged, as compared with the first edition, by the admission of the ointments recognized in the pharmacopœias of several European and American countries and by other authorities. During the printing of the book, the new (third) edition of the German pharmacopœia made its appearance, but has,

practically, made scarcely any change in this class of preparations, except that savine ointment was dismissed, and boric acid ointment was introduced. We should think that the comparison of the different authoritative standards would be greatly facilitated by printing their corresponding formulas together.

The work, in the preparation of which great care and extensive study is evident, will prove of great value not only to the practising physician, but also to the pharmacist, on account of the numerous recognized formulas and the many practical details which are of value in the manufacture of many of these preparations. It should be stated yet, that the work forms No. 6 in the Physicians' and Students' Ready-Reference Series of the same publisher.

The Physicians' Visiting List for 1891. Philadelphia : P. Blakiston, Son & Co. Price, for 25 patients, \$1.

The present is the fortieth yearly issue of this useful Visiting List, the arrangement remaining substantially the same as has been found convenient in preceding years. The preliminary matter, including a number of useful tables, has been revised, and short instructions for the transportation of injured persons have been added. The list of new remedies for 1891 includes several older ones, like ethyl bromide, gurjun oil and pilocarpine, for which new applications have been found.

Pharmacographia Indica. A History of the Principal Drugs of Vegetable Origin met with in India. By Wm. Dymock, Brigade Surgeon, Bombay Army, etc. ; C. J. H. Warden, Surgeon-Major, Bengal Army, etc. ; and D. Hooper, Quinologist to the Government of Madras, Ootacamund. London : Kegan Paul, Trench, Trübner & Co. 1890.

It affords us much pleasure to announce the appearance of Part III of this valuable work, which constitutes the first half of the second volume. Myrobalans, cloves and other myrtles, colocynth and other cucurbitaceæ, and many drugs of the umbelliferæ, rubiaceæ, compositæ and orders allied to the foregoing are described in the part now before us. Many of the drugs noticed are also used here, some have become obsolete with us, while a much larger number is but little known in the western hemisphere, or even in Europe. Thus, Persian *sagapenum* is unknown in America, and is seldom used in India ; that which reaches Bombay is mostly exported to London. The *asafetida* known as *hing*, which reaches India, is all consumed in that country, together with a considerable portion of that called *hingra* ; the stony *asafetida*, which has occasionally found its way to the western world, seems to be made, so we are informed, more for convenience of carriage than for deception, and the juice of the plant is sometimes so fluid that it runs out upon the surrounding ground and becomes mixed with the sand. In regard to *cinchona*, we learn that in 1885 a bark yielding 3 per cent. of quinine sulphate would have been worth 1s. 9d. per pound ; at the present time the same bark would not sell for more than 6d. The historical, statistical and other information given in connection with each drug is of very great interest ; but we confess that we were somewhat disappointed in not finding any account of *ipecacuanha*, and from this must conclude that the cultivation of the plant in India has not been attended with success, a conclusion for which we were, in a measure, prepared from the reports published some years ago.

Grasses of the Southwest.—Plates and descriptions of the Grasses of the Desert Region of Western Texas, New Mexico, Arizona and Southern California. Part I. By Dr. Geo. Vasey, Botanist, Department of Agriculture. Washington: Government Printing Office. 1890.

This handsome publication contains fifty faithfully-executed lithographed plates, quarto size, of the grasses of the region indicated, and gives botanical descriptions of the species figured, together with information concerning special characteristics, the usefulness and the probable advantage to be derived from the cultivation of the plants as pasture grasses. A second part will complete the volume, and it is contemplated to publish, in a similar manner, illustrations of the grasses of the Pacific Slope.

Contributions from the U. S. National Herbarium. No. III. Issued November 1, 1890.

The pamphlet contains about thirty pages, descriptive lists of plants collected by Dr. Edward Palmer in 1890, in Lower California and Western Mexico, and examined by Dr. G. Vasey and J. N. Rose. A full-page plate illustrates a hitherto unknown composite plant, which has been named by the authors *Coulterella capitata*, in honor of Professor John M. Coulter, the learned botanist of Wabash College.

Chloralamid (Schering) the new hypnotic, discovered by Dr. J. von Mering. Published by Lehn & Fink, New York.

A pamphlet of forty-seven pages, containing papers on the use of this compound, republished or abstracted from German and American periodicals.

Revue Internationale de Bibliographie médicale, pharmaceutique et vétérinaire, dirigée par le docteur Jules Rouvier, Professeur de clinique obstétricale et ginecologique, etc. Paris et Beyrouth (Syrie).

A pamphlet of 247 pages, appearing quarterly, and containing, systematically classified, the titles of essays on the above subjects, published in the different countries. A curious mistake has happened in the translation from the English and German of the titles of two papers on rosemary and oil of rosemary, the name of the plant being rendered in French *roses marines*, instead of *romarin*. Several other errors due to incorrect translation have been noticed; but these are insignificant in comparison with the faithful labor and evident care bestowed upon the collection and arrangement of the vast material. As will be noticed from the above, the publication is a classified index of the periodical literature, and aims at embracing all periodicals of the civilized world.

Twenty-first Annual Report of the State Board of Health of Massachusetts. Boston: 1890. 8vo, pp. lxx and 457.

This publication contains reports and statistics relating to the quality of food, drugs, milk, ice, etc., supplied in Massachusetts.

First Annual Report of the State Pharmaceutical Examining Board of Pennsylvania, for the year 1888. Harrisburg: 1890. 8vo. pp. 91.

The official report was handed to the Governor of the State July 17, 1888; but the usual delay in the printing of official documents is the cause of its becoming accessible in print fully two years after it has been rendered. It gives a statement of the moneys received and disbursed during the year, and lists of the

pharmacists and qualified assistants registered in compliance with the pharmacy law.

The following printed Proceedings of State Pharmaceutical Associations have been received :

New Jersey.—Twentieth annual meeting. pp. 95. See August number, p. 428.

Ohio.—Twelfth annual meeting. pp. 126. See August number, p. 428.

Wisconsin.—Eleventh annual meeting. pp. 79. See September number, p. 475. The report of the State Board of Pharmacy, which is issued with the Proceedings, occupies 37 additional pages.

OBITUARY.

Max A. J. Behrens died suddenly of heart-disease, October 4, at Helena, Montana, where he had carried on the drug business for some time past. He was born in Germany in 1853, and came to this country at the age of nineteen, when he settled in Chicago until he removed to Montana about three years ago.

William Lewis Turner died in Philadelphia, November 1, last, in the fifty-fifth year of his age. He was born at Baltimore, and losing his father when twelve years old, was compelled to partially take care of himself, and to supplement the limited schooling, received until then, by attending the night schools at the Maryland Institute, Lyceum and other public institutions. All through life he was fond of reading, and earnestly endeavored to add to his store of knowledge. He entered the retail drug business with Mr. A. Kennedy, at Tenth and Ogden Streets, Philadelphia, in 1857. Four years later he started in business for himself, and in 1864 he removed to Eleventh and Oxford Streets, where he remained until death. He was an occasional contributor to this and other journals, but during recent years he took a more active part in the effort to correct the evils besetting pharmacy, and to stay the baneful influence of the nostrum interest. His earnestness in this endeavor gained for him much influence in the Pennsylvania Pharmaceutical Association, whose presiding officer he was for the term 1887-88. He was a man of original thought, who had the courage of his convictions; and though the writer of the present notice was not unfrequently compelled to differ from his views, he never had occasion to question the sincerity of his opinions, or his integrity of purpose.

Notice of the death of the following graduates of the Philadelphia College of Pharmacy has been received :

Munroe Bond, class 1873, a native of New Hampshire, died in Philadelphia September 15, aged 38 years. He was engaged in the drug business and practised medicine, having graduated from the Jefferson Medical College in 1879. Two papers on fluid extracts, written by the deceased, were published in this Journal in 1873.

Frederick S. Booth, Ph.G., class 1883, died suddenly of heart affection, October 24, aged 30 years; he was in business at 326 East Girard Avenue.

John E. Cook, class 1873, died at Media, Pa., September 12, of hemorrhage of the lungs, aged 37 years. He was a mechanic of no mean ability, had paid much attention to botany, was for some years assistant to the chair of Botany and Materia Medica in the Philadelphia College, and at the time of his death held the chair of the same branches in the Powers College.

Benjamin H. Diehl, class 1881, died October 15, aged 32 years. He had also studied medicine, and at the time of his death conducted a drug store, in connection with the practice of medicine, near Broad and Cumberland Streets, in this city.

Amos Hansell, class 1858, died at the age of 53 years; for a number of years he had been in business at Twentieth and Market Streets.

Franklin Chapman Hill, class 1848, died of heart failure, after a protracted illness, at Princeton, N. J., on the 5th of November, 1890, in the 63d year of his age. He was born in the city of New York; his family removing to this city in 1835, he was educated in the school of the late Thos. D. James; learned the drug business in the store of Professor Edward Parrish, and afterward opened a store at N. E. cor. of Eleventh and Mt. Vernon Streets, Philadelphia. His uncle, who was President of Antioch College, Ohio, induced him to continue his studies there, and afterward at Cambridge, Mass., where his fondness for scientific problems drew him into civil engineering, with which he employed himself some time, both in private life and in the U. S. army during the late war. He became associated with Mr. Ward, of Rochester, who was much engaged in paleontologic work, and this started a new field of industry in which he greatly excelled; so well versed in entomology was he that the trustees of Princeton College purchased a collection of drawings made by him for their museum. He left a wife, 4 sons and 4 daughters, some of them engaged in scientific pursuits. The Trustees of Princeton College voted his salary to be paid up to January 1, 1891, in recognition of the value of his services to the museum of the College as curator.

T. S. W.

John J. Lantz, class 1887, died in this city, October 7, aged 25 years. He was in business on Fairmount Avenue.

Harold D. Owens, class 1889, died at the age of 23 years, October 20, from injuries received October 15, at the fire, caused by an explosion of illuminating gas, at the factory of H. K. Mulford & Co., 2132 Market Street, this city.

VARIETIES.

Quinine pills are recommended by E. Sohet (*Bull. Soc. Roy. de Phar.*) to be made with lactic acid, of which three drops are stated to be sufficient to form a plastic mass with one gram of quinine sulphate. A somewhat larger quantity of the acid will be required in case other solid medicaments are to be incorporated. Since lactic acid is a normal constituent of the organism, its use for this purpose, in such a minute quantity, appears to be less objectionable than that of other acids.

Pyoktanin or *methyl-violet*, according to Liebreich (*Therap. Monatshefte*, July), is a mixture of aniline products of uncertain composition, which explains

the different results obtained from its use. In eye diseases, Braunschweig found it to cause great damage; Kolliker observed no benefit from it, and Mauthner considers it useless. *Victoria-blue*, which closely resembles methyl-violet, has no action on microbes whatever. See also this volume, p. 295.

Aletris farinosa as a *Cathartic*.—The rhizome is administered in the form of a powder, in doses of 0.6 gm., as a simple bitter tonic. In larger doses, it possesses cathartic, emetic and somewhat narcotic properties. It has been employed with good results in colic, dropsy and chronic rheumatism.—*Journal de Médecine*, September 7, 1890.

The diuretic action of milk sugar observed by Professor Séé (AM. JOUR. PHAR., 1889, p. 417) has been recently confirmed by Dr. Zawodski (*Deutsche Med. Ztg.*) who employed it in a severe case of dropsy, with excellent results; he made no change in the diet of the patient and allowed him to take fluids. The dose was from 12 to 18 grams a day, given with a considerable quantity of milk that contained at least 50 grams of milk sugar. The author thinks that this substance is to occupy a prominent place among the diuretics, as it is easily administered, agreeable in taste and of low cost.

Tellurate of potassium, according to *La Médecine moderne*, October 21, 1890, has been found by Neusser to be valuable in the suppression and diminution of night-sweats. He employs one-third of a grain, in pill-form. After the patients have taken this dose for a short time, it may be doubled without unfavorable results and with a good effect in reducing the quantity of sweat, provided the first dose has not been sufficient to control it. In rare cases, the drug may produce dyspeptic symptoms. As a general rule, however, it has a favorable effect.—*Medical News*, Nov. 1, 1890.

The Uses of Keratin.—Drs. Unna and Beirdorff recommend that drugs which irritate the gastric mucous membrane, such as digitalis, squill, salicylic acid, iodide of iron, etc., be given in the form of pills coated with keratin, or in capsules of the same substance. Drugs which diminish the activity or which neutralize the acidity of the stomach, such as tannic acid, nitrate of silver, and alkalies, should be given in the same way. A coating of keratin is also desirable when prescribing drugs that are required to act on the intestinal mucous membrane alone, and is especially valuable in the use of drugs which are given for the purpose of destroying intestinal worms, but which, if introduced into the stomach in the ordinary way, are absorbed to such an extent as to cause toxic symptoms, or to reduce their germicidal activity. Keratin is obtained by treating shavings of horn with ether, alcohol and an acid. It possesses the peculiar property of being insoluble in the stomach, but freely soluble in the intestines.—*Lancet*, October 18, 1890.—See paper by E. Bourquelot in AMER. JOUR. PHAR., 1889, p. 421.

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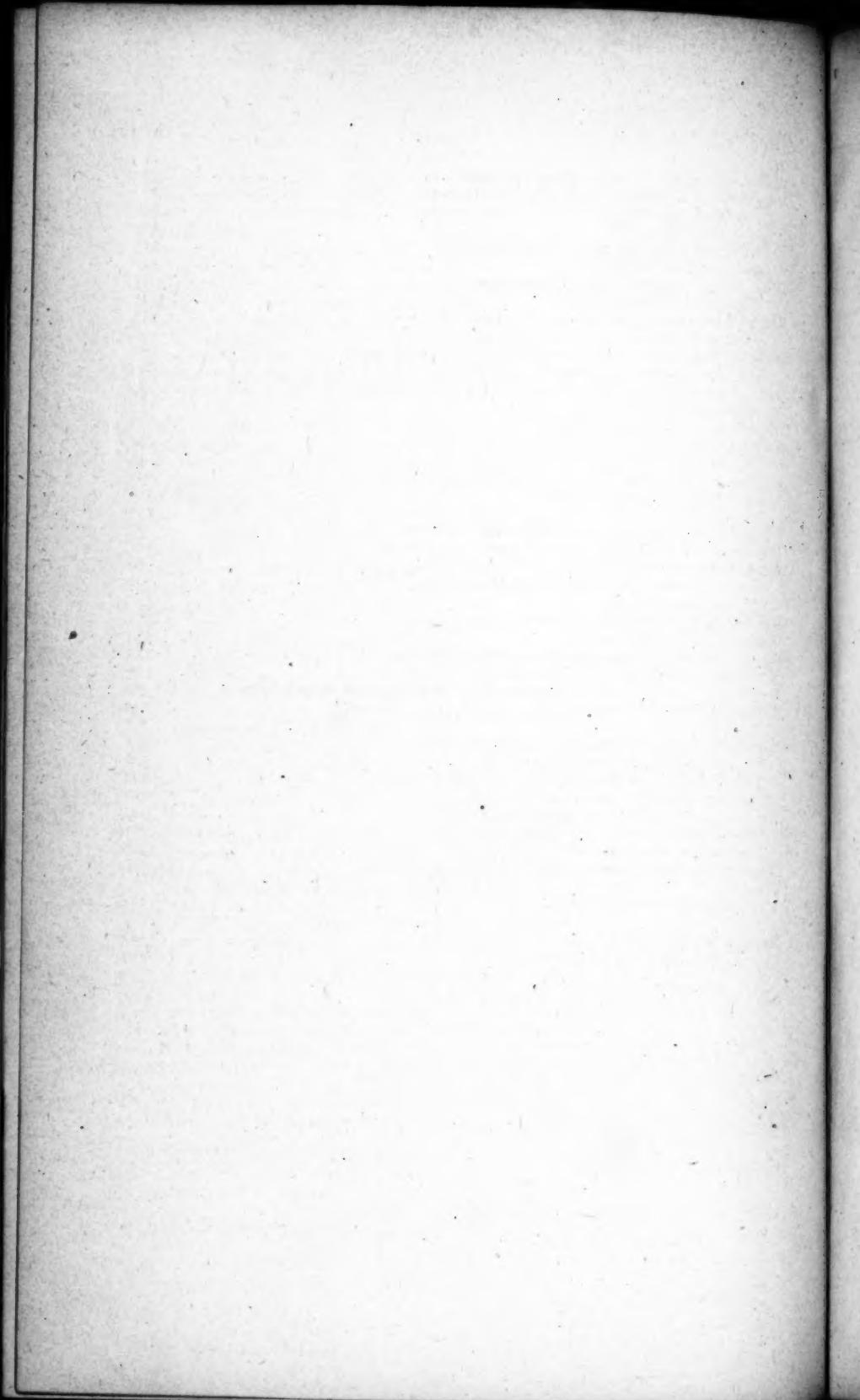
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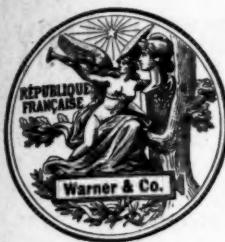
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